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ISSUE NO. 68
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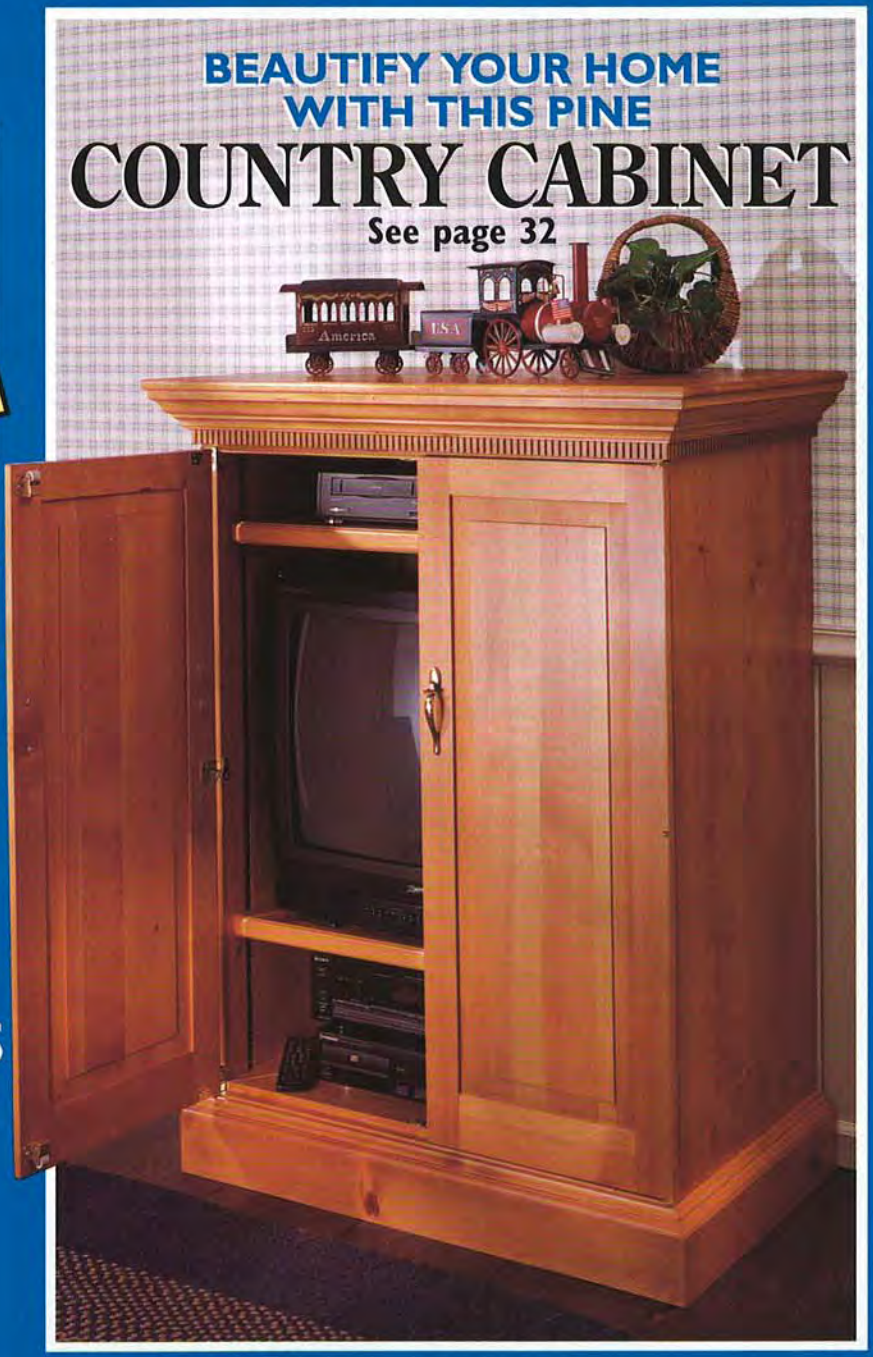

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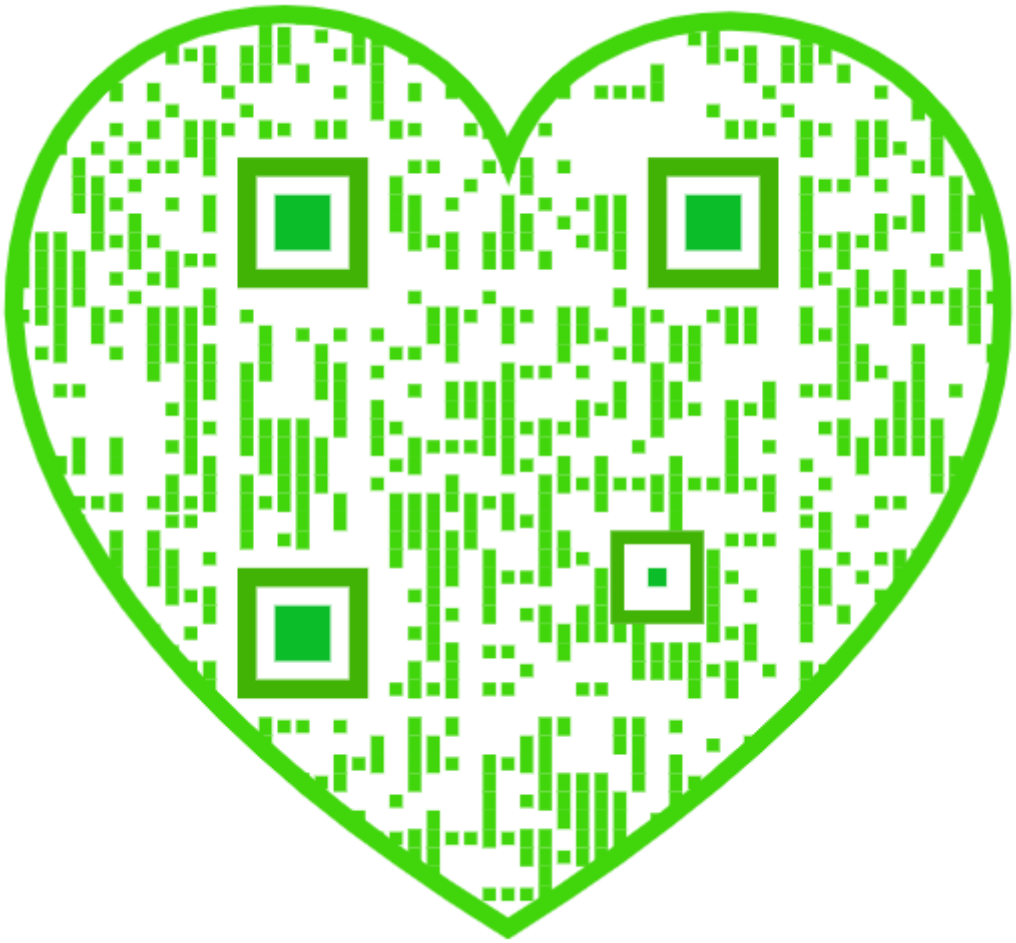

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THE EDITOR'S ANGLE

HOW'S THIS FOR A BIG FISH STORY

▲ *WOOD* magazine reader Jeff Ward gives us the thumbs-up sign as he stands beside his trophy halibut in Homer, Alaska.

▼ This is me taking a break and reading a recent issue of *WOOD* magazine. Some wood carvings, don't you think?

There I sat this past June, between two life-sized wood carvings on the boardwalk in Homer, Alaska, reading a recent issue of *WOOD* magazine. You can imagine my surprise when a young guy with a green stocking cap and a yellow rain jacket approached from a distance and said, "You've got to be from *WOOD* magazine! This looks like something you guys would do." What he was referring to was me posing for the photo *above right*. I could hardly believe it. Here I was 2,500 miles from home on a fishing trip with Kenn Spahr (my best buddy) and Bill Krier, *WOOD* magazine's Tools/Techniques Editor. Just think of the odds against meeting one of our readers in this remote spot.

The guy turned out to be Jeff Ward, a reader from Narragansett, Rhode Island. Like us, he had traveled to Homer to fish for some jumbo halibut.

On the day Jeff and I met, he had just returned from a charter-boat trip during which he caught a 111-pounder. That's Jeff and his tasty trophy *above left*.

When he's not fishing, Jeff does restoration carpentry around Narragansett. He also told me that he and his wife Monica had just finished building a new house.

So what's the moral of this fish story? No matter where a *WOOD* magazine team member wanders off to, he'd better be on his best behavior. You just never know when you'll run across one of our 650,000 readers.

Larry Clayton

Photographs: Bill Krier

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FEBRUARY 1994 ISSUE NO. 68

CRAFTSMAN CLOSEUP
Waste-wood wonders.....25
You'll never again throw away your wood scraps once you see what Massachusetts woodturner Al Francendese does with his. Al's sources for scrap also may surprise you.

DEVELOP YOUR SHOP SKILLS
Here's how to make accurate and long-lasting dowel joints 30
Learn the tried-and-true ways to mark, drill, glue, and clamp workpieces using this popular method of joinery.

Masterpiece in pine.....32
Looking for a handsome country entertainment center? Or, how about a wardrobe for your bedroom? This stylish cabinet lets you go in either direction, depending on your needs.

Harvesting hardwoods south of the border.....38
Don't miss this first-hand account from wood importer Mitch Talcove of how Mexico manages its supply of exotic hardwoods through sustained yield.

TURNING
Run rings around plain bowls 40
Add excitement to your next turned bowl with an eye-catching inlaid ring. We'll show you how.

SHOP SAFETY
Simple strategies to save your shop from fire.....44
Keep your shop from going up in smoke with the inexpensive, common-sense advice found here.

IDEA SHOP
Finishing center.....46
Improve your shop (and the way you finish wood projects) with our fold-down rotating worktable. Included is an extenstion arm used for finishing small items and hanging them out to dry.

This issue's cover wood grain: Birch

CARVING

Cupid's mystery valentine 50

Amaze your carving buddies with this intriguing arrow-pierced heart. How did the arrow get through there? Find out inside.

Wetlands visitors 52

Scrollsaw and paint a beautiful wildlife scene using inexpensive resawn pine. Our story includes all of the full-sized patterns.

IN SEARCH OF THE PERFECT FINISH

Gel stain 58

Create some special effects with today's new, colorful, pickling gels. Our step-by-step instructions show you how.

WHAT WOODWORKERS NEED TO KNOW ABOUT...

Transferring patterns 60

Apply woodworking patterns quickly and easily to project parts using these helpful hints.

CRAFT SHOP

Animals with altitude 62

Have fun with your bandsaw by cutting out this delightful long-legged trio of giraffe figures.

Aspen-leaf treasure chest 64

Store watches, rings, tie tacks, and other jewelry items in our captivating camel-backed box. It looks great on a dresser.

TOOL BUYMANSHIP

$300 to $700 tablesaws 66

Check out the latest in mid-priced tablesaws as we review eight models and compare their features and performance. Yes, we do have a winner.

SHORT-SUBJECT FEATURES

Editor's Angle 1
Talking Back 6
Tips From Your Shop 10
Wood Anecdote 20
Great Ideas For Your Shop 74
Products That Perform 76
Finish Line 80
Picky About Pine 82
Ask *WOOD* 88
Finishing Touches 96

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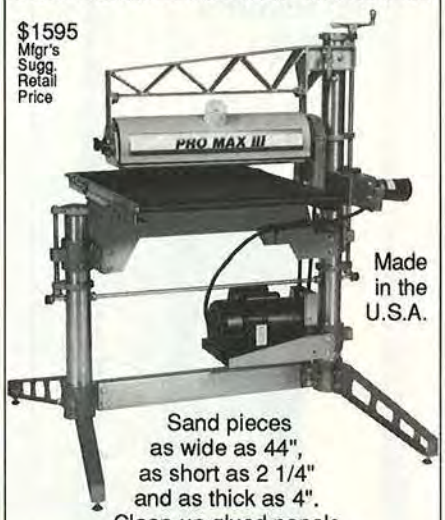

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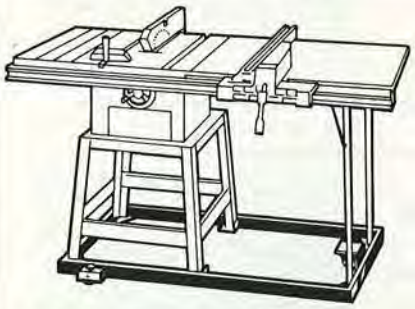

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TALKING BACK

Print this article

We welcome comments, criticisms, suggestions, and even compliments. Send your correspondence to: Talking Back, Better Homes and Gardens® *WOOD*® Magazine, 1912 Grand Ave., Des Moines, IA 50309-3379

Contrast gives character to table

I assembled my tabletop for the "Elegant-Oak Dining Table" (see photo) from the February 1993 issue from boards randomly selected for grain and width. This gives the finished piece a lot of contrast in the top, and allows me to use the occasional "character board."

—Niles L. Perrone, Plymouth, Wis.

You're right, Niles. The random assembly of wood in the tabletop will display more contrast in figure than will matching the grain at the glue joint. However, gluing together different types of grain increases the chance for glue-joint failure. Be aware of this potential when you choose to edge-join panels for grain contrast.

Norway lives!

We want to make a correction to the map we printed in "Finishing Touches" in the October 1993 issue. Norway still exists as an independent country, and has not been rejoined with Sweden as our map erroneously indicated. We apologize to all our readers, especially those of you of Norwegian descent, and say "Ikke saa!" (not so!)

Stretch that desk!

I am planning to build the "Down-To-Business Oak Desk" from the August 1993 issue. However, I want to add a second set of drawers to the right side of the desk. Can I expand this design without adding bracing to support the extra length?

—Don Gilb, San Gabriel, Calif.

Expanding the desk by the width of another set of drawers, Don, will not require additional bracing if the width of the leg opening is not changed. The framework of the second drawer unit will support the additional length of the desk.

Continued on page 8

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TALKING BACK

Continued from page 6

Un"bear"able measurements

When fact checking the dimensions for the "Teddy Bear Chair" for the December 1993 issue, we accidentally and erronously raised the location and dimensions for the seat and armrests. This resulted in several wrong dimensions on different drawings. If you plan on building the chair, please write us first at The Teddy Bear Chair, WOOD Magazine, 1912 Grand Avenue, Des Moines, IA 50309-3379. (Foreign readers please include an international reply coupon.) We'll send you a copy of the revised drawings. We sincerely apologize for any inconvenience this may have caused.

Plan needs a board stretcher

In the Great Ideas For Your Shop "Fold-Out Work Supports" from the September 1993 issue, the legs of the work support will overlap when folded with the measurements shown. If my math is correct, the back piece should be 75" long or the side pieces 35¼" long to allow the legs to fold in flat.

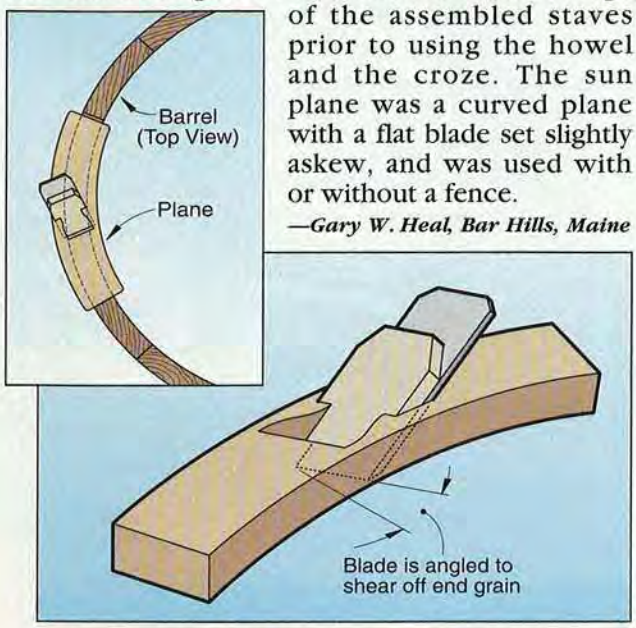
— Wayne C. Mullin, Lafayette, Ind.

Yes, Wayne, your math is correct. We suggest you cut the side pieces 35¼" long.

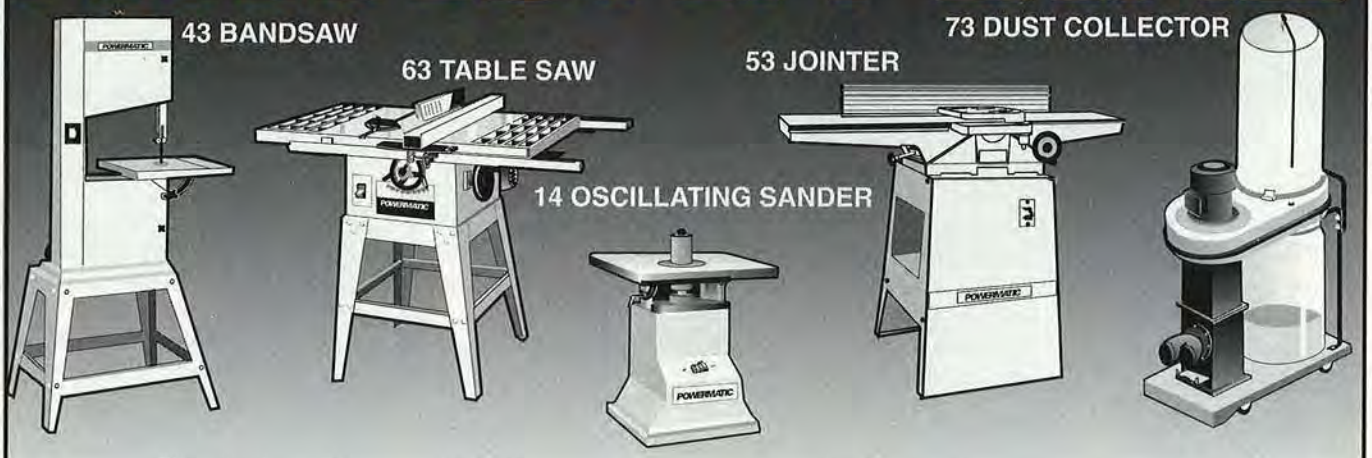
A cooper's sun plane

The "Yesterday's Tools" article about barrelmaking planes in the October 1993 issue neglected to mention that a sun plane was needed to level the tops of the assembled staves prior to using the howel and the croze. The sun plane was a curved plane with a flat blade set slightly askew, and was used with or without a fence.

—Gary W. Heal, Bar Hills, Maine



ARTISAN LINE



The Artisan Line machines incorporate exclusive features that set them apart - industrial ball bearing blade guides on the band saw; a heavy duty heavy duty Vega rip fence with micro-adjust on the table saw; floor sweeping capability for the powerful dust collector; a versatile fence with positive stops at ± 45 and 90 degrees on the jointer; and a cast iron tilting table with built-in dust collection hookup on the oscillating sander. Powermatic provides many superior features and they are yours at very affordable prices!

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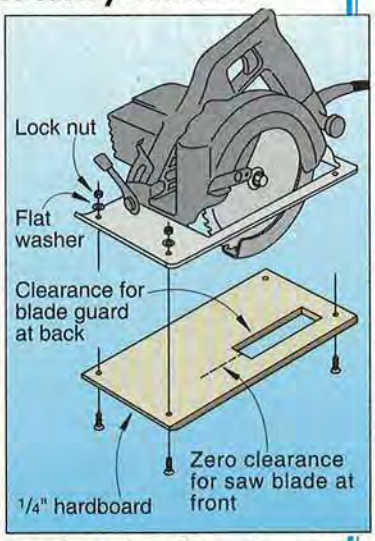
Clearance plate poses safety concerns



The "Tips From Your Shop" submission on the zero clearance plate for a portable saw in the September 1993 issue poses a safety hazard. This plate prevents the guard from covering the blade. Like many other woodworkers, I am used to setting my circular saw down after completing a cut with the expectation that the guard will automatically move back into place. The clearance plate as illustrated in the shop tip prevents this, creating a dangerous situation to anyone using the saw.

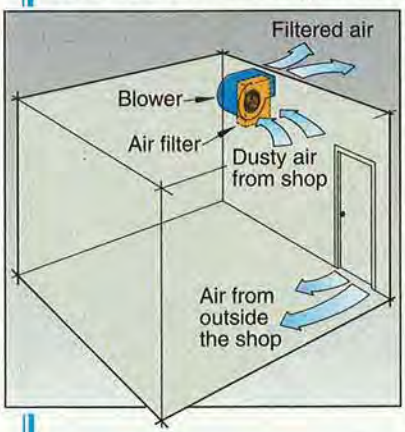
I modified the hardboard insert plate I put on my saw by cutting an opening that would allow the guard to return to the closed position. The front of the saw does the cutting, so this rear notch does not affect the the performance of the clearance plate. The guard works beautifully and I'm more comfortable with my saw.

— Harold Schreiner, Averill Park, N.Y.

Negative can be good

I recently received your September 1993 issue and have a comment about the Talking Back letter headlined "Furnace Fan Helps Bad Air." I installed a similar system in my house, but I did it differently. My workshop was not a sealed room, and dust used to get out under the door and through cracks in the ceiling.

I installed a fan in the outside wall of my workshop, with the filter on the inlet side of the fan. The exhaust blows the air out of the workshop. I did this to create a slightly negative pressure in the room rather than a positive one as in the article. This allows clean air to enter the room through the cracks instead of pushing dusty air out into the house.



—Daniel Gilbert, Rossmoor, Calif.

Thanks, Dan. We received letters from several of our readers making the same suggestion.

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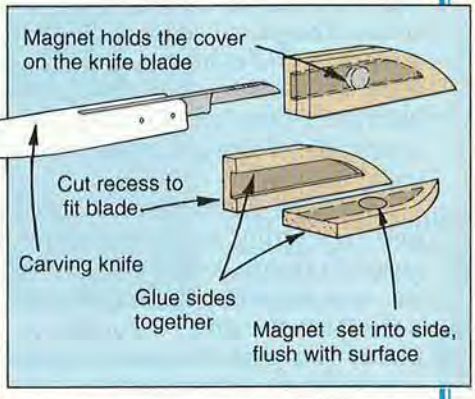
This knife sheath sticks to the job

When you're not carving with them, you should cover your knife blades to protect against nicks and damage—both to the blades and to your hands. You can't always find a sheath that will stay on the blade, though.

TIP: Build a scrapwood blade cover with a magnet to keep it in place. Trace around the blade on one piece of scrapwood about ⅜" thick. Carve out the marked area to accommodate the blade. Draw another line parallel to the blade outline, and about ⅜" from it. Stack the marked piece on top of another piece of stock, and scrollsaw along the line. Drill a hole in the uncarved piece where shown, and insert an appropriate magnet. Glue the magnet in place with epoxy or cyanoacrylate adhesive. Then, glue the two halves of the sheath together, sand, and finish.

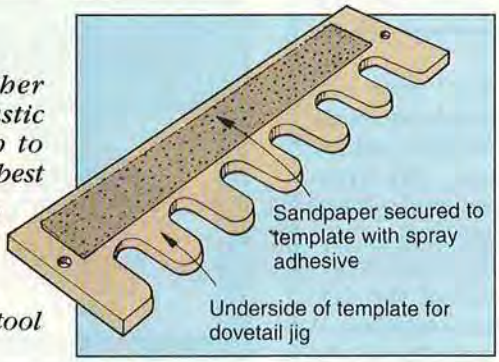
—Leonard Wovna, Bayonne, N.J.

For his tip, Leonard receives a set of six Swiss woodcarving tools, shown *above*, from Woodcraft Supply, Parkersburg, W. Va.


Magnet holds the cover on the knife blade
Cut recess to fit blade
Carving knife
Glue sides together
Magnet set into side, flush with surface

Fine sandpaper cures troublesome shifting

Many dovetail jigs (and other types of fixtures) rely on plastic or metal guides that clamp to your workpiece. Despite your best efforts to tighten the clamps, that slick guide may not stay precisely in place on the smooth wood surface, especially when you're pushing a tool against it.



TIP: Cut a piece of fine sandpaper (maybe 220 or 320 grit) to fit the side of the fixture that contacts the workpiece. Apply adhesive, such as 3M's 77 Spray Adhesive, on the back of the sandpaper, and attach it to the fixture. The sandpaper provides high friction against the workpiece, reducing the chance that your fixture guide will creep out of position.

—Ty Powe, San Dimas, Calif.

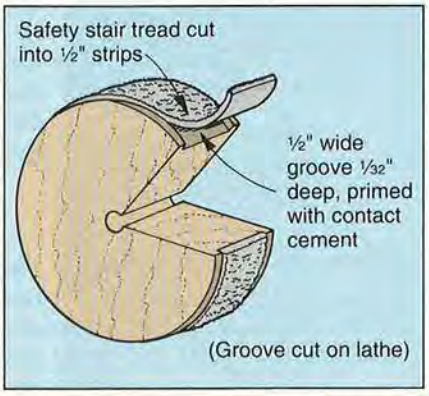
Stair-tread safety material makes better tire treads

The wooden toy wheels that you turn on your lathe skid on smooth surfaces, mar some floors, and wear out fast.

TIP: Buy a roll of self-adhesive non-skid rubber—the thin, gray safety tread with a surface that looks something like a sponge. Cut the 2"-wide roll into ½"-wide sections (or any other width appropriate to the size of the wheels you're making).

When you turn the wheels, form a groove to fit the tread, about 1/32" deep around the circumference of each. Cut a strip of tread long enough to fit into the groove. For a permanent installation, apply contact cement inside the groove and allow it to dry before laying the tread in place. Trim the tread ends for a neat joint. With rubber treads, your wheels will skid less, scar less, and last longer.

—Johnny Janssen, Anaheim Hills, Calif.



Continued on page 12

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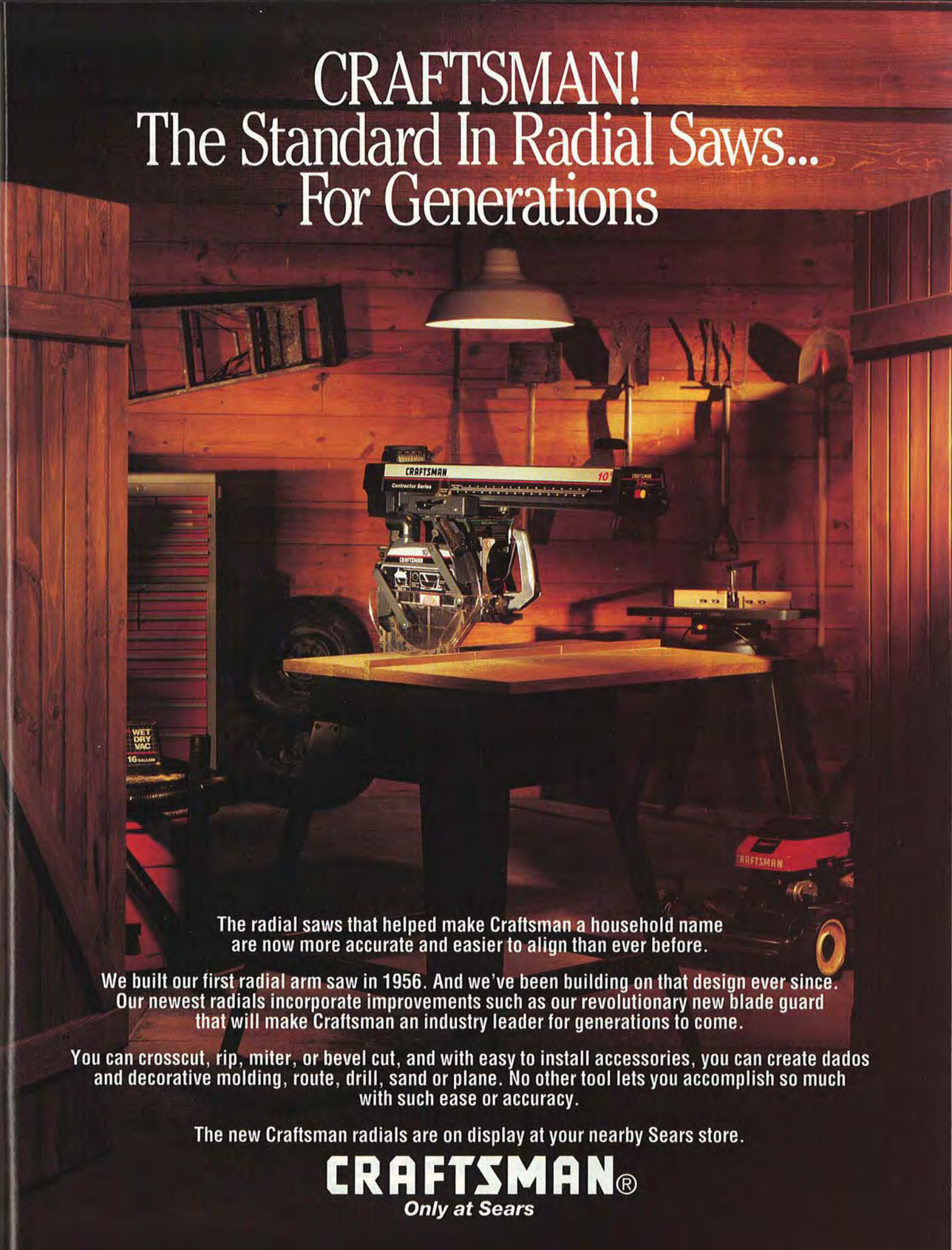

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TIPS FROM YOUR SHOP (AND OURS)

Continued from page 10

Keep handscrews handy with overhead storage

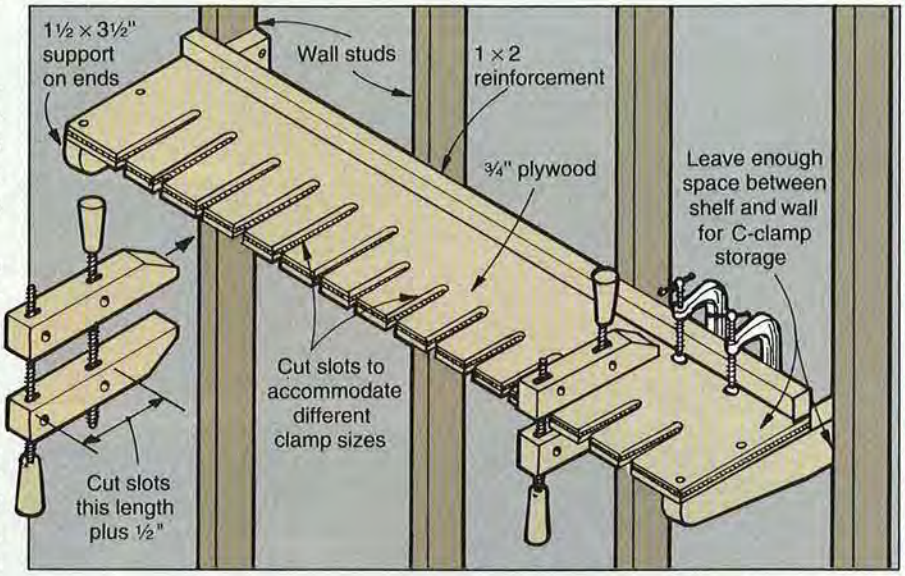
Handscrew clamps, your helpers for so many shop tasks, can leave you feeling helpless when it comes time to put them away. They sure fill up a lot of storage space, fast.

TIP: For out-of-the-way, yet easy-to-reach storage, hang those handscrews high on a wall with this notched storage rack. Make it out of 3/4" plywood 12" wide, of a length to suit your situation.

Allow 1/2" spacing between clamps when you lay out the 1/2"-wide slots. To determine slot depth, measure from the front side of the threaded rod nearest the clamp tip to the back of the clamp and add 1/2". For each slot, drill a 1/2" hole the proper distance from the front edge of the rack, and then cut to it with a portable jigsaw. Screw and glue a 1×2 strip, on edge, to the topside of the rack at the back edge.

Mount the shelf high, using appropriate brackets. By leaving 3" between the rack and the wall, you can hook large C-clamps over the back for storage.

—D.B. Gonzalez Jr., Pensacola, Fla.


1½ × 3½" support on ends
Wall studs
1 × 2 reinforcement
¾" plywood
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Cut slots to accommodate different clamp sizes
Cut slots this length plus ½"

Continued on page 14

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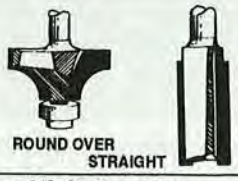

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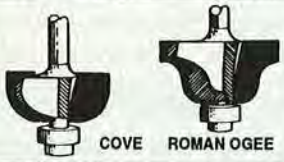

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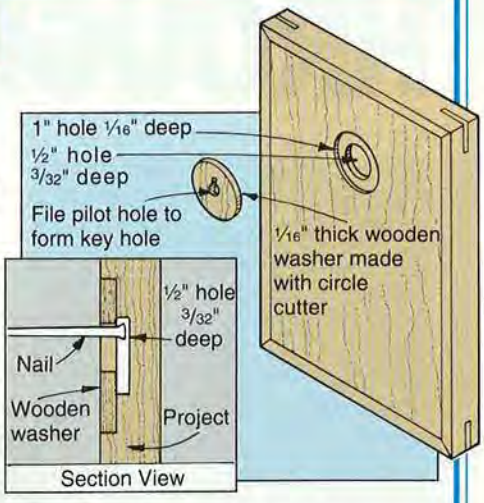
TIPS FROM YOUR SHOP (AND OURS)

Continued from page 12

Thin-stock hanging slot drilled instead of routed

A keyhole hanging slot routed into the back of a wall-mount project sure makes life easy—both in building the item and hanging it up. But, if you're working with thin stock, you're out of luck.



TIP: Try this procedure to make a keyhole hanging slot in stock as thin as 3/16". All you need are two Forstner bits and a circle cutter. First, using the circle cutter, cut a 1"-diameter disc from material about 1/16" thick. Then, elongate one side of the pilot-bit hole with a file, forming a keyhole shape.

Next, bore into the back of the project with a 1" Forstner bit to a depth equal to the thickness of the disc you just made. In the center of that hole, bore 1/16–3/32" deep with a 1/2" Forstner bit. Now, glue the disc into the 1" counterbore, pointing the elongated portion of the center hole up.

After the glue dries, you're ready to hang the item over an appropriate screw or nail. The void left by drilling with the 1/2" bit will allow room for the fastener head behind the hanging slot.

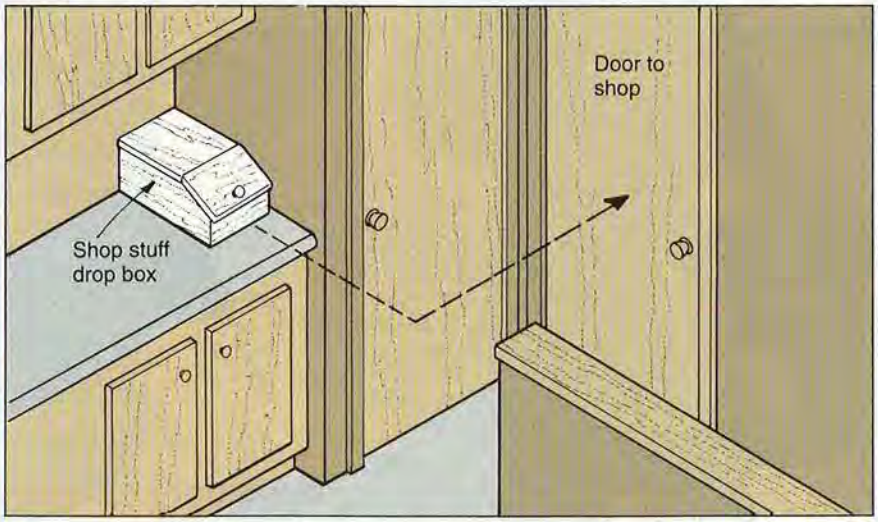
-James Upham, Midland, Tex.

Designated drop box collects shop strays

A screwdriver ends up in the dining room after a home-repair job. A tool catalog and a couple of pamphlets lie on the coffee table in the living room. And the sanding belts you bought at the woodworking show last weekend still occupy that corner of the kitchen counter by the back door. Not everyone in your household applauds this whole-house workshop concept, or knows exactly where to put these things away.

TIP: Build a simple tray or box (or use an existing one), and place it near a door that leads to your workshop—the basement door or the one out to the garage, for instance. Now, whoever encounters something anywhere in the house that belongs in the workshop can drop it into the box. Whenever you head for the shop, grab the stuff out of the box to take with you.

-Dennis Drechsler, Victoria, B.C.



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12" x 30T x 1" "	162	119	8" x 40T 3/32	136	99
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DURALINE Hi-AT

Note: *Fine Woodworking Editorial Nov./Dec. 1988 No. 73, pg. 65, S.N. recommends high alternating top bevel (ATB) thin kerfs and large blade stiffeners for smoothest cuts on RADIAL SAW, etc.*

Jim Forrest, President and designer microscoping cutting edge.

All 5/8" holes. Boring up to 1-1/4" $7.50 extra
Larger holes - time basis. Shipping $4.50

	LIST	SALE
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Delta	9" x	80T x 5/8"	204	119
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Hitachi & B&BD & DeWalt	12" x	80T x 1"	229	139
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TIPS FROM YOUR SHOP (AND OURS)

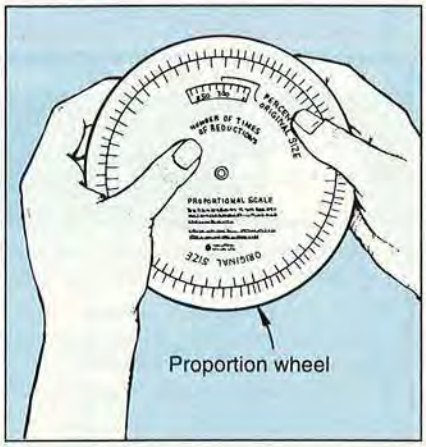
Continued from page 14

Flat-sand easily with a couple of clipboards

Because small parts are difficult to hold flat against a moving abrasive, it's all too easy to round their edges or grind them to wedges when power-sanding.

TIP: Move the part over the sandpaper instead of the other way around. Place two clipboards together as shown, and clamp a sheet of sandpaper under the clips. Firmly held at both ends, the sandpaper stays smooth as you move the part back and forth to sand it flat.

–Frank Toroney, Glenmoore, Penn.



Proportional scale makes changing dimensions easy

Changing the size of a project leads to cumbersome math at times, especially when you want to maintain proportion. For example, you're enlarging a piece that's ⅜" wide and 6" long to 8" long. How wide should it be?

TIP: A graphic artist's proportional scale makes such calculations simple. You just set the original dimension on the rotating circular scale next to the new measurement. Then, each new dimension will be shown right next to the corresponding original. You can set the wheel to a known percentage of enlargement or reduction, too, to determine new measurements. And, it shows you the answers in fractions of an inch, not decimals. (Ours covers a range from ¼" to 90".) You can buy one at an art-supply store for less than $5. By the way, you need to make that piece in our example ½" wide.

–Bill Kuhlmann, Colorado Springs, Colo.

Continued on page 18

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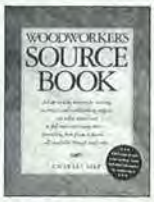

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TIPS FROM YOUR SHOP (AND OURS)

Continued from page 16

Reinforced stock keeps scrollsaw cutouts together

When scrollsawing silhouettes from thin solid stock, small pieces break off all too easily. Even a zero-clearance table insert can't prevent all of the breakage.

TIP: Before you start cutting, cover the back of your stock with self-adhesive shelf paper or plastic packaging tape. The backing will help prevent breakage while sawing and damage later when you put the delicate cutout on display.

—Susan Evarts, Meriden, Conn.

MORE TIPS FROM OUR WOODWORKING PROS

- We embellished a handy box with the decorative stenciling shown on *pages 58-59*. The technique also works great for adding colorful accents to stools, chairs, tables, or other casual furniture.
- When edge-joining narrow stock to make a wide panel, keep the surface flush by routing slots and installing splines. See *page 33* for details.
- To cut thin strips of stock safely, build the pushstick referred to in the lath art article and shown on *page 74*.
- Don't need the complete paint center cabinet shown on *page 46*? Consider building just the turntable—it sure makes finishing small projects a breeze. For added storage space, just build the cabinet without the fold-down table.

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TURPENTINE A TREE FULL OF TROUBLE FOR SAWS

Although durable, turpentine's wood proves nearly impossible to work.

In Australia's Blue Mountains and the coastal districts of New South Wales, there grows a tree so difficult to cut that lumbermen practically limit its processing to sawing it down (and that takes considerable effort). With a hardness said to be 100 times greater than red oak, the tree's wood unmercifully dulls saw blades and other cutting edges that encounter it.

Luckily for those with the job of sawing this timber, the wood of turpentine (*Syncarpia glomlifera*) lasts nearly indefinitely. It defies attack by beetles, termites, and the fungi that causes decay. Under water, turpentine fights off marine borers, too. In fact, if the timbers are used with the bark left on—as in dock pilings, for example—the wood enjoys an even longer life.

Oddly enough, only a drying kiln can extract a toll from turpentine wood. For some strange reason, turpentine's cellular structure reacts horribly to kiln heat. Without a prolonged session of air-drying, turpentine wood actually collapses in the kiln. And even air-drying it doesn't guarantee success because flat-sawn turpentine wood badly checks during the process.

It's no wonder then that Australian wood processers throw up their hands in disgust when it comes to the turpentine tree. They declare, "Less is better," and leave the recalcitrant wood alone for use in heavy construction.

Illustration: Jim Stevenson

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HOW TO FIND YOUR WAY THROUGH THE WOODS.

In woodworking, every project is an adventure. You explore the wood, studying its grain, searching for something hidden within. Your goal is to emerge, weeks later, with a proud souvenir. A planter. A Shaker chair. Or perhaps a rustic chest of drawers.

Ironically, the ease of any woodland journey depends largely on a decision you make *before* embarking: your choice of tools. To this end, a move in the right direction is Skil Woodshop Tools.™

Skil Woodshop Tools are a full line of woodworking tools designed to make any project a pleasure.

Every step of the way.

Enter the woods with a confident first cut on the 3400 10″ benchtop tablesaw. Its powerful 13.0 amp motor and the exclusive Accu-Lign™ self-aligning, quick-set rip fence makes short work of sizing raw stock.

Afterward, smooth off cuts and round corners with the 3370 combination 4″ belt/6″ disc benchtop sander. A quick-release belt adjustment (another Skil exclusive) lets you effortlessly switch between vertical and horizontal bed positions.

If your plans call for intricate cuts, use the 3330 16″ benchtop scroll saw. It accepts either plain or pin-

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end blades and comes with a built-in blade length gauge for quick setting. Plus, to keep

of vari-orbit, auto scroll and straight-line cutting modes, it offers more options than any other jigsaw.

And for accurate, repetitive drilling, the 3380 benchtop drill press is precisely what you need. The depth measurement and sturdy, adjustable table guarantee consistency from first hole to last.

The 2¼ hp motor carves signs, cuts joints and trims

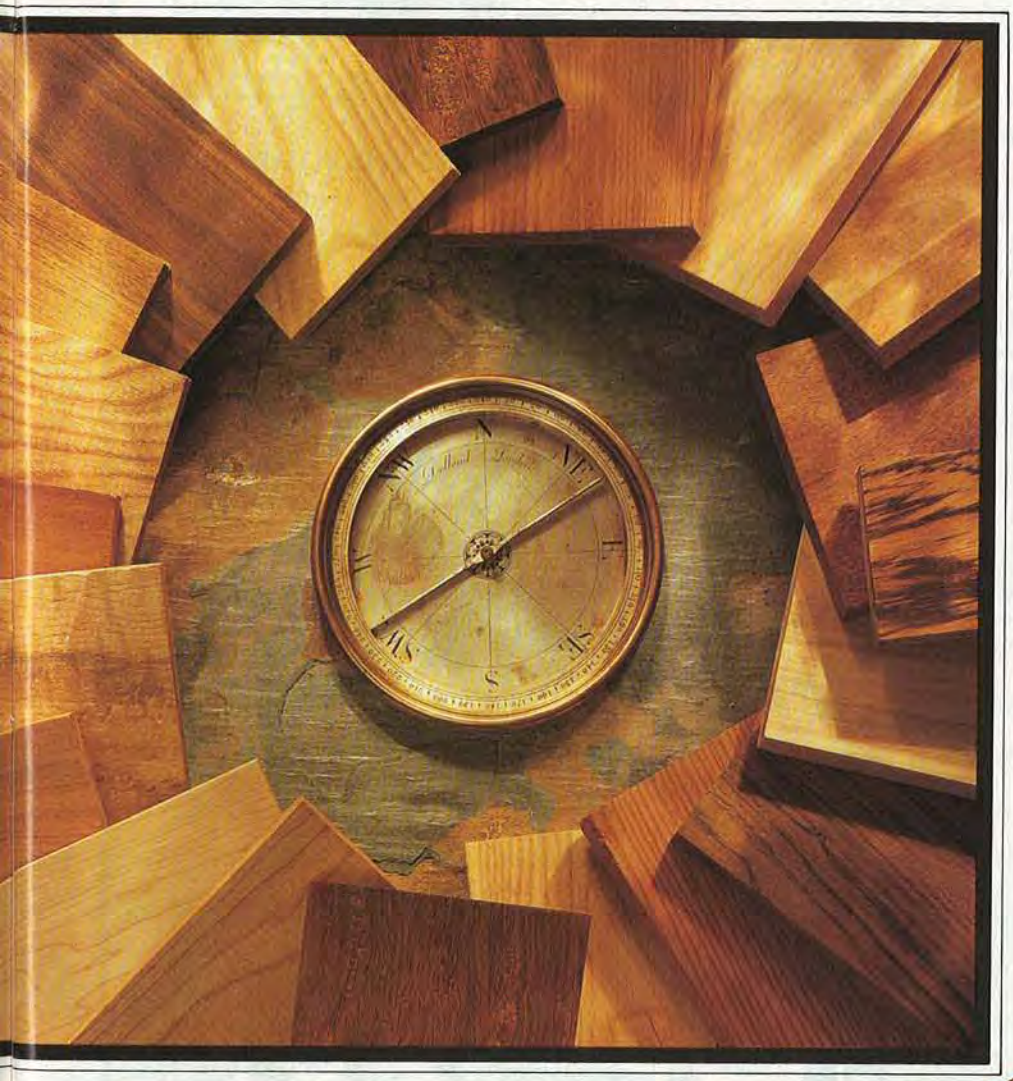
decorative edges with power to spare.

When it's time for assembly, try the innovative HD 1605 plate joiner. Simply cut matching slots, pop in a wooden biscuit, glue and you have yourself a quick, durable joint.

Once it's all together, give your project a once over with the HD 7576 palm grip sander. The 7576 performs an exacting 1/16" orbit 13,000 times a minute for a fast finish.

Next time you explore the woods, bring along the perfect traveling companions—Skil Woodshop Tools. You'll find those shown here and other Woodshop tools in stores everywhere. Just look for this label.

It's a sure sign you're on the road to woodworking success.



your cutting path clean, it has a high-velocity dust blower.

To navigate tricky interior cuts, there's the 4395 jigsaw. With a choice

Of course, you could just let your imagination run wild with the HD 1875 plunge router.

SKIL WOODSHOP TOOLS

SKIL®

MLCS

MAKE BEAUTIFUL RAISED PANEL DOORS WITH YOUR . . . 1/4" or 1/2" ROUTER . . . 1/2" or 3/4" SHAPER

Professional production quality bit makes it quick and easy to produce matching rails and stiles — the panel raising bit with ball bearing guide makes the raised panel perfect every time.

SALE PRICE FOR COMPLETE SET $69.95 Regular value over $150.00!

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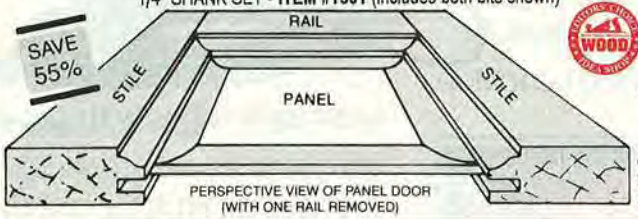
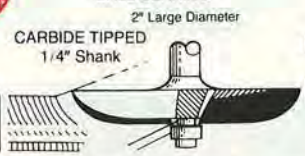
Shaper Cutters set: **Item #1303** SAVE! only **$99.95** Set: Rail & Stile & Raised Panel Cutters

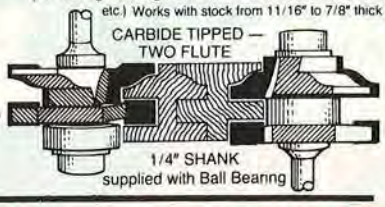


RAISED PANEL BIT SUPPLIED WITH BALL BEARING



REVERSIBLE COMBINATION RAIL and STILE BIT

(For making matching rails and stiles in raised panel doors, etc.) Works with stock from 11/16" to 7/8" thick



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#1310	45° CHAMFER - 5/8" Cutting Length NEW !	1/4"	$15.00
#1311	45° CHAMFER - 5/8" Cutting Length	1/2"	$17.00
#1312	THUMBNAIL - 1- 3/16" Large Diameter	1/4"	$18.50
#1313	THUMBNAIL - 2-1/2" Large Diameter	1/2"	$35.00
#1314	ROUND OVER - 1/8" Radius	1/4"	$11.00
#1315	ROUND OVER - 3/16" Radius	1/4"	$11.00
#1316	ROUND OVER - 5/16" Radius	1/4"	$14.00
#1317	ROUND OVER - 1/4" Radius NEW !	1/2"	$12.00
#1318	ROUND OVER - 3/8" Radius	1/2"	$15.50
#1319	ROUND OVER - 1/2" Radius	1/2"	$17.00
#1320	ROUND OVER - 3/4" Radius	1/2"	$21.00
#1321	MULTIFORM MOULDING - 15/16" Carbide Height	1/4"	$40.00
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#1324	RABBETING - 1/4" Deep	1/4"	$15.00
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#1326	RABBETING - 3/8" Deep	1/2"	$13.00
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#1329	CORE BOX - 3/4" Large Diameter	1/4"	$15.00
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#1332	BULL NOSE - 3/4" Diameter of Circle	1/2"	$21.00
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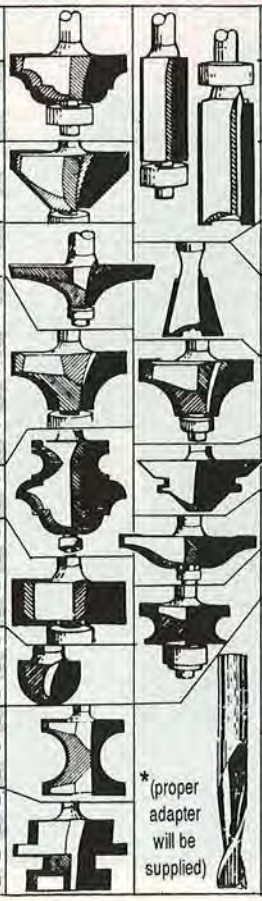
#1335	TONGUE & GROOVE - Wedge	1/4"	$29.00
#1336	TONGUE & GROOVE - Wedge	1/2"	$29.00



ITEM NUMBER	DESCRIPTION (ALL 2 FLUTE)	SHANK SIZE	PRICE
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#1338	FLUSH TRIM - 1/2" Diameter — 1" Cutting Length	1/4"	$ 8.00
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#1340	PATTERN / FLUSH TRIM - 1/2" Diameter	1/4"	$15.00
#1341	PATTERN / FLUSH TRIM - 3/4" Diameter NEW !	1/4"	$17.00
#1342	PATTERN / FLUSH TRIM - 3/4" Diameter	1/2"	$19.00
#1343	KEYHOLE CUTTER - 3/8" (bit not	1/4"	$ 8.50
#1344	KEYHOLE CUTTER - 1/2" shown)	1/4"	$ 9.00
#1345	DOVETAIL (HSS) - 1/4" Diameter — 7-1/2°	1/4"	$ 6.50
#1346	DOVETAIL - 1/2" Diameter — 14° NEW !	1/4"	$ 6.00
#1347	DOVETAIL - 1/2" Diameter — 14°	1/2"	$ 6.50
#1348	BEADING - 1/4" Radius	1/4"	$13.00
#1349	BEADING - 3/8" Radius	1/4"	$15.50
#1350	BEADING - 1/2" Radius	1/4"	$17.00
#1351	LOCKMITRE - 7/8" Cutting Length NEW !	1/4"	$32.00
#1352	LOCKMITRE - 1-1/8" Cutting Length	1/2"	$45.00
#1353	OGEE RAISED PANEL - 2" Large Diameter	1/4"	$28.00
#1354	OGEE RAISED PANEL - 2-3/4" Large Diameter	1/2"	$32.95
#1355	EDGE BEADING - 3/16" Diameter of Circle	1/4"	$15.00
#1356	EDGE BEADING - 5/16" Diameter of Circle	1/4"	$15.50
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#1358	SPIRAL UPCUT - 1/4" Diameter (solid carbide)	1/4"	$12.00
#1359	SPIRAL UPCUT - 1/4" Diameter (solid carbide)	1/2"*	$12.00
#1360	SPIRAL UPCUT - 3/8" Diameter (solid carbide)	1/2"*	$24.00
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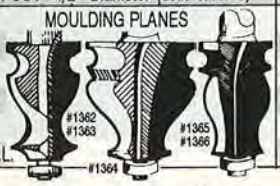
#1365	1" C.L.	1/4"	$31.95
#1366	1-11/16" C.L.	1/2"	$31.95



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WASTE-WOOD WONDERS

Don't expect Massachusetts woodturner Al Francendese to spend a ton on wood for his turnings. Scrapwood works just fine!

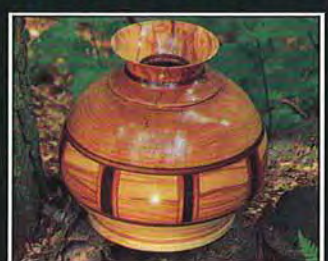
After reading Al Francendese's letter, I had to wonder just what was going on in Dover, Massachusetts. Here was a guy with a doctorate in biochemistry and physiology—an experienced scientific researcher—who now devotes himself to full-time woodturning. And unbelieveably, his stock mostly comes from scrapwood that other people toss out! On top of that, he believes in the low-tech approach: turning on a lathe that cost less than $160 and making a lot of his own turning tools.

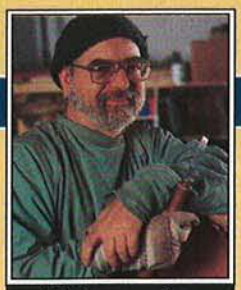
But, after spending a few days with Al in his home workshop, I found out that he's for real, alright. He just got tired of all the red tape, politics, and administrative antics involved with scientific research and

Continued

Only the knowing could recognize 2×12 spruce joist sections and laminated scraps of cedar siding highlighting small pieces of pau ferro.

Sections of lauan plywood reclaimed from an old door set off the oak body and center band of olive-wood scraps.





Al Francendese

WASTE-WOOD WONDER

Print this article

decided to return to his true love–woodworking. Luckily, his wife, Linda, backed his decision. Now, after only a few years of turning, his creative eye and craftsmanship are paying dividends. Many thanks, Al, for letting us share in your work.

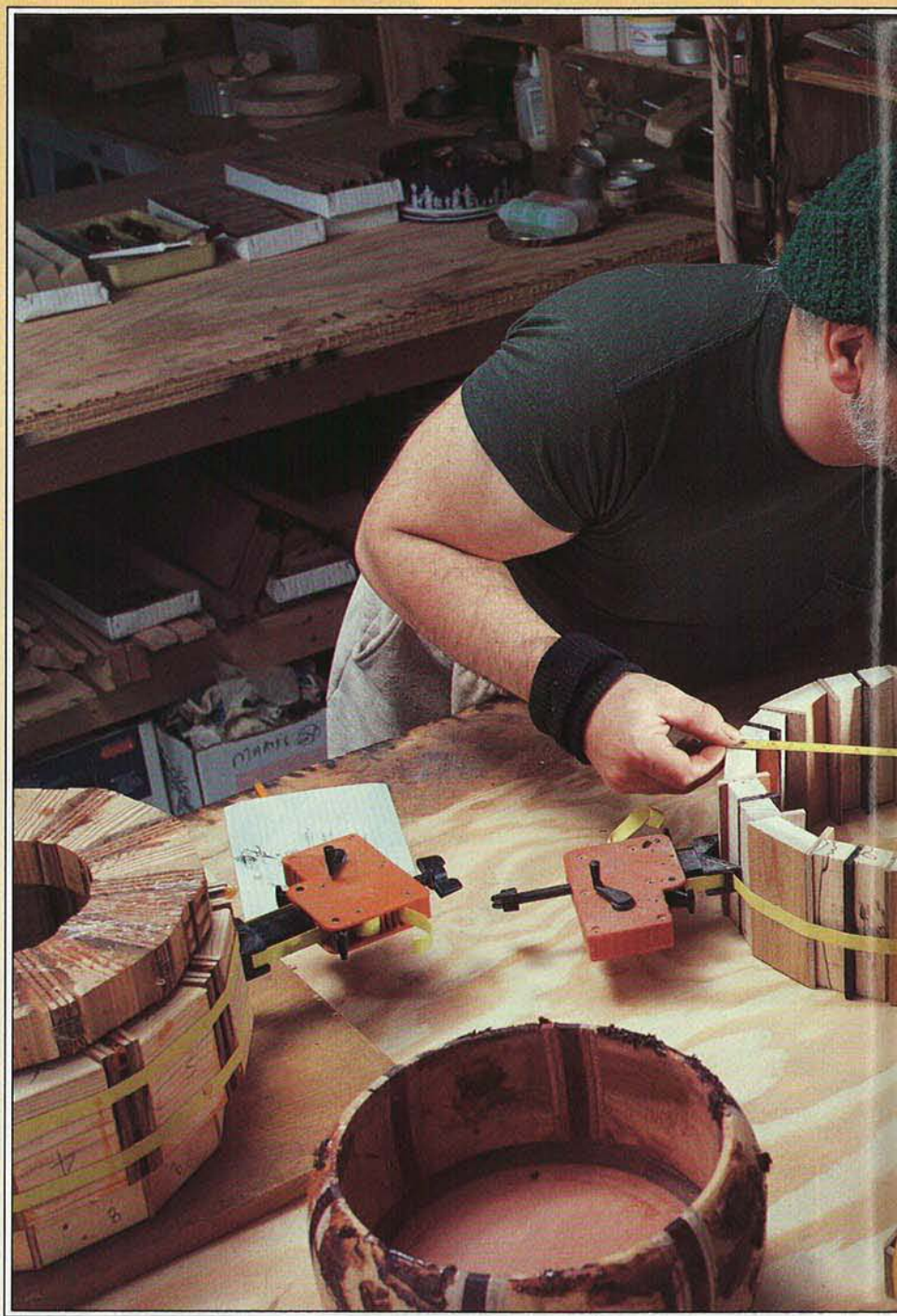
Peter J. Stephanos
Senior Editor

Down at the Dover town dump, Al Francendese is as well-known as he once was around the life-sciences division at the Los Alamos National Laboratory in New Mexico. Now sporting a field cap, outdoorsman's shirt, and baggy sweat pants instead of the white lab coat of a professional scientist that was once his uniform, he regularly digs through the discards in search of materials.

From an old side chair he might reclaim a board foot of beech. The cabinet of a tossed-out TV means several slabs of lauan plywood. He might even find a usable washing machine motor to drive one thing or another in the shop. But if there's nothing worth hauling that particular day, Al will drop by a construction site on his way home.

New homes going up guarantee an abundance of stock: oak, ash, and yellow poplar from pallets; fir and pine cutoffs; partial, even full, sheets of plywood and cedar siding. Of course, Al always asks the contractor if it's okay to scrounge—some have even offered to save scrap for him, after they've seen his bowls.

"Every day or so, the accumulated scrap gets hauled to the landfill



Above: **In his basement workshop, Al transforms segments of materials from construction sites and the town dump into intricately laid-out bowl layers.** *At right:* **An optical illusion created by geometry. The top sections, cut at a 30-degree angle to the surface before joining with the accent stripes, appear to wave after Al contoured the surfaces.**

anyway, so actually I'm helping the environment by recycling it into my work," Al says, leaning against his lathe, dark eyes flashing his intensity.

An effective teacher called "trial and error"

At age 46, Al looks back to a long association with wood. In the New York City apartment where he grew up, his father was always tinkering with woodworking, despite limited space.

"My dad worked for the post office. Because our work space was limited—actually a broom closet—he would bring home mostly little things to tinker with, like clocks or accessories," Al recalls. "I used to watch him, and sometimes help."

Despite other occasional pursuits—including a spell as a hand on a commercial fishing boat—Al always found place for the woodworking knack inherited from his father. In fact, while attending college at New York's Colgate University on an academic scholarship, he established a local reputation for custom carpentry. "I supported myself through school by building and installing custom bookcases," he says. "I even toyed with the idea of starting a small furnituremaking business, but went for higher education instead." Indeed. Al eventually held academic positions at Emory University in Atlanta, and Vassar College in New York. Then, he moved on to research at Los Alamos, and finally to an army research installation in Natick, Massachusetts. But at home, he never gave up woodworking.

"When I decided a few years ago that I'd had it with science and research, I returned to wood," Al says. "But I wanted to turn. From classes that I'd taken in pottery, I knew that I could come up with shapes if only I could learn woodturning." And learn he did, all by his lonesome.

"I deliberately didn't read anything about woodturning, or go to a demonstration, because I'm the kind of person who learns best by making my own mistakes. And I made them all," he laughs.

"I once had a 10-pound chunk of oak go flying off the lathe. I accidentally whacked off about an inch of a beautiful Marple's skew. I've made bowls that have warped and bowls that have cracked. I've messed around with all types of finishes, and studied how to put things together and how not to put them together. I've even made my own turning tools from screwdrivers and wrecking bars. Now, though," he sighs, "I think I'm finally ready to take a woodturning symposium!'

Big dividends from odds and ends of scrapwood

For most woodturning novices, figuring out the cutting angles and assembly of segmented bowls requires countless hours. Al's problem-solving talent, though, helped him speed up his learning period. Of course, his shrinking bank account kept him motivated as well.

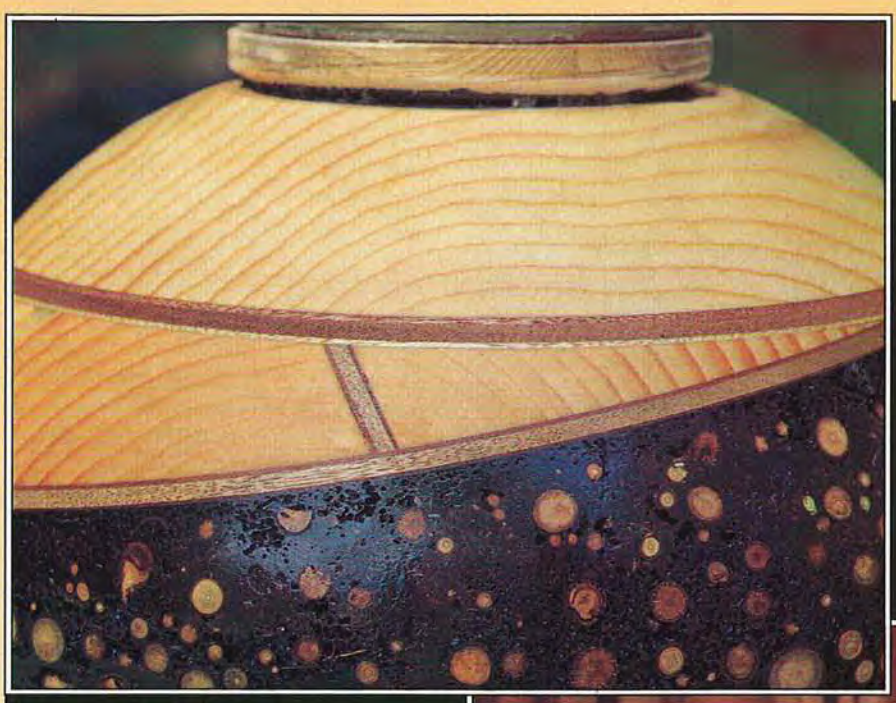
"Segmented bowls appealed to me for two reasons," Al explains. "One was my budget limit. I'd set $3,000 as the most I could spend the first year, and that had to include the lathe! So, if you go out and buy a good chunk of exotic wood, it's going to cost a pretty penny. I couldn't see spending that kind of money at a point in my career when I considered myself a novice.

"Secondly, the construction agreed with my sense of conserva-

Continued

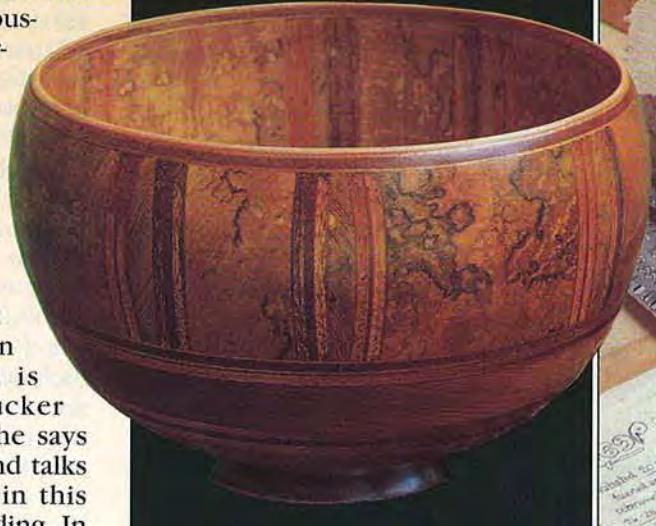
Al traps airborne dust particles with his shop-made particulate cabinet .

WASTE-WOOD WONDER



Above: **Experimenting with construction, Al found a way to lay up twigs in a bed of marine epoxy mixed with sawdust for an unusual visual effect.**

***Below*: This bowl features spalted black cherry. Al saved the wood from its former life as a truck's wheel chocks.**

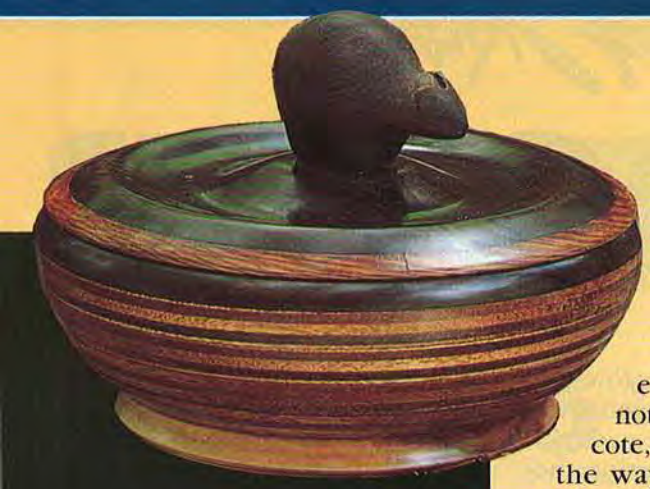


tion—you don't end up with 95 percent of the wood on the floor in shavings. Too," he adds, "segmented work matched the limitations of my first lathe—the shaft couldn't take a 25-pound hunk of wood. But with segmented and stave construction, you start with an already lightened structure. Of course, the cutting and assembly prior to turning are time-consuming, but I could trade time for money because that's what I had the most of."

Al's attraction to scrap wood came naturally enough. That's what his first few practice bowls were made of. Then, he began to wonder about expanding on that source, and started hunting around seriously.

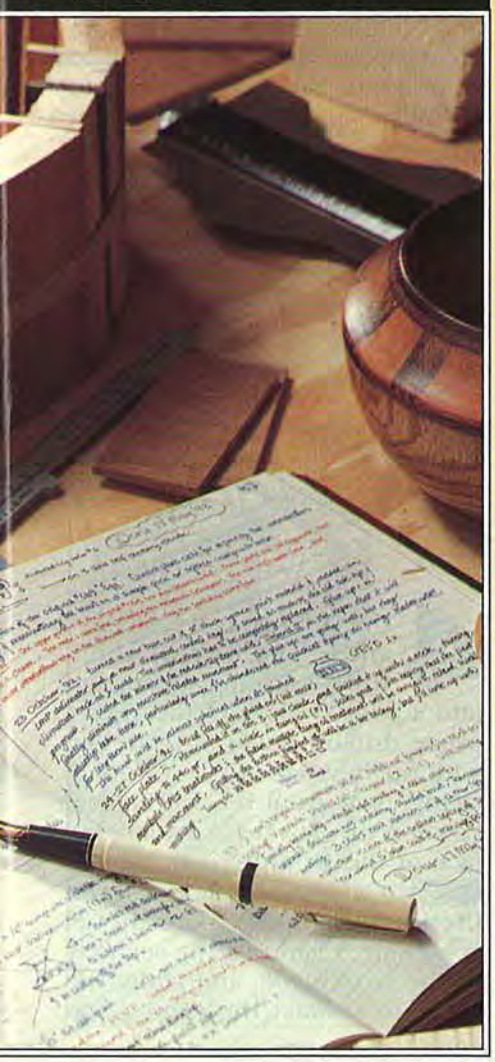
"At our local home center I found stacks and stacks of old pallets," Al remembers. "Some were even made out of walnut—obviously not good enough for furniture, with knots and all, but perfectly adequate for the small amounts I needed. Soon, I was able to see that there was beauty in the mundane, if the material was used just right."

Al delights in pointing out the origins of the wood in his bowls. "That wood is spalted cherry that a trucker used for wheel chocks," he says as he excitedly picks up and talks about each. "The pieces in this band are scraps of cedar siding. In this bowl over here, I featured the end grain of Douglas fir 2x4s. This stripe with its great irridesence is



Above: With a body of common Philippine mahogany plywood, this bowl, with its lid and handle of zircote, has the look of the Southwest, where Al maintains a second home.

Below: As he did for years in laboratory research, Al keeps a detailed log. This one, though, notes bowl construction.



Philippine mahogany stripped off a damaged interior hollow-core door, and it's become somewhat of a trademark."

Of course, Al mixes in some dark or colorful exotic woods, too. But not very much. "I'll use zircote, or tulipwood, or wenge the way Chinese use meat in cooking, just to flavor the whole," he comments.

Classroom math equals woodturning results

Reading about how to turn didn't fit Al's exploring nature. But he admits to pulling out an old high-school geometry textbook to figure the cutting angles for the pieces in his bowls. "I looked up all the old equations that use pi to help me calculate cutting angles and segment dimensions in relation to bowl diameter and circumference," Al says, at the same time opening a log book filled with neatly lettered words and numbers. "I made this chart for the size pieces needed for bowls of different diameters. If you use 360 degrees divided by 2N, and N is the number of segments, you get the number of degrees to which you saw each segment."

With a few years experience behind him now, Al rarely uses the chart. But he retains his log book. In it, he records the thoughts, processes, woods, and designs for each bowl. His years of laboratory work show through when he advises, "Plan everything and write it down. If you make a mistake, you can refer back."

Today, Al's experiments involve wood species, designs, bowl shapes, finishing, toolmaking, and even machinery fabrication. "The half-horsepower lathe I built would be considered underpowered for its 22" throw, but I added a flywheel at the headstock to move the center of the mass closer to the bearings. This smoothes out the forces during turning and reduces chatter and stalling."

Beautiful bowls, built up one ring at a time

Al's segmented bowls of course consist of many individual pieces. Yet, they're also made up of rings, or layers, of those pieces, as shown on *page 27.*

"Each has what I call a central-theme ring," says the turner. "That's where the viewer's eyes focus. Then there's a base, and a top. Vessels that aren't open on top have an additional ring, the neck. A delineator band of contrasting wood separates them."

Al joins the pieces in each band with waterproof glue, then clamps them. When dry, he sands it flat top and bottom for joining. "If they're really rough, I sand them against the stationary disk sander," he notes. "But for true flatness I use the bench top. I buy sheets of 80-grit production sandpaper and paste them down, then grind the band against it ."

Finishing bowls has required experimentation, too. "I liked the idea of a water-base lacquer, but it hasn't held up," says Al. "And oil looks good, but allows moisture movement so tiny gaps develop between segments. Right now I'm going with a penetrating marine epoxy undercoating and either an oil or a polyurethane top coat."

You can bet the finish that Al finally selects won't make his vessels look like fine porcelain. "There's a strength and boldness to contruction-site stock," he says. "I want my bowls to impress people the way Chicago did poet Carl Sandburg when he called it the City of Big Shoulders."

Captivated by Al's Conversions?

For where to see Al's turnings, write him at: *27 Brookfield Rd., Dover, MA 02030.*

Written by Peter J. Stephano Photographs: John Kane

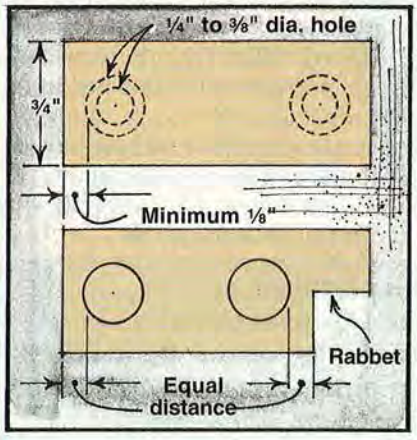
Develop Your Shop Skills

Here's how to make accurate and long-lasting DOWEL

Print this article

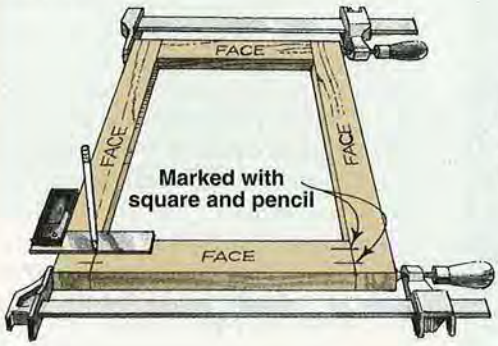
Woodworkers have long favored dowel joinery for several good reasons. It's simple, requires a minimal investment in tools and supplies, and works in a wide variety of applications. However, a dowel joint can quickly turn into a disaster if you don't follow basic procedures. Here's how we ensure success when using dowel joinery in the *WOOD*® magazine shop.

1 First, choose dowels of a diameter that's one-half to one-third the thickness of your workpieces. For example, with ¾"-thick stock, use ¼"- to ⅜"-diameter dowels. Generally, it makes sense to use the largest possible dowel (⅜" in our example), unless you're working with narrow stock. Why this exception? We like to space dowels at least ⅛" from the ends of a joint, and at least ¼" apart. So, with ⅜" dowels, a workpiece should measure at least 1¼" wide.



Note in the example *below left* of a rabbeted frame that you must be careful to exclude the width of the rabbet when measuring the space available for the dowels. Keep this point in mind when dealing with molded frames such as lipped cabinet doors.

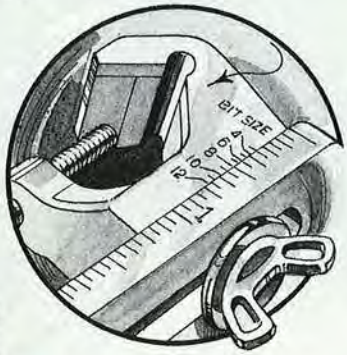
2 Dry-clamp your workpieces face side up, and check the corners for fit and square. With a sharp pencil and a square, mark the centerlines of the dowels. Each joint should have at least two dowels. Space the dowels no more than 3" apart (workpieces wider than 4" require three or more dowels).



***Note:** In this article we'll demonstrate the use of the widely available Stanley 04-059 doweling jig. If you already own another jig, you'll find that many of the doweling principles presented here apply to your jig as well. This jig works on stock up to 2¾" thick and at least 1¼" wide. It accommodates drill bits in diameters from 3/16" to ½" in 1/16" increments. We like this jig because of its simplicity and accuracy.*

3 To drill a hole centered on the thickness of the stock, you need to adjust the jig's slide (the part that holds the drill-bit guides) according to the thickness of your workpiece and the size of the dowel hole. For example, to drill a ½" hole in a 1"-thick workpiece, adjust the slide so the No. 8 mark on it aligns with the ½" mark on the body of the jig as shown *below*.

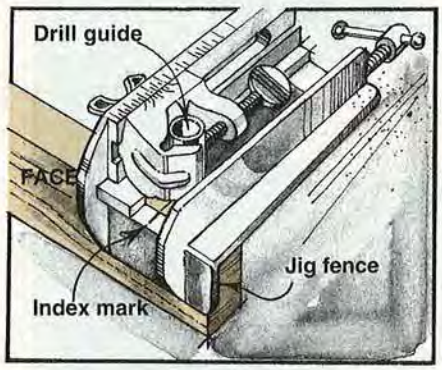
How did we arrive at those figures? Simple. The No. 8 (an auger-bit designation) corresponds to ½" drill bits, No. 7 corresponds to 7/16" bits, No. 6 corresponds to ⅜" bits, and so on. We arrived at ½" by dividing 1" in half.



4 Unclamp your workpieces and place one of them with its mating surface up, into a bench vise. Slip the appropriate drill-bit guide into the jig, with the beveled end of the guide facing away from the workpiece. Position the jig's fence against the face of the workpiece as shown. Precisely align the index mark on the jig with the marked dowel centerline. Clamp the jig securely to the workpiece, and allow the guide to contact the mating sur-

JOINTS

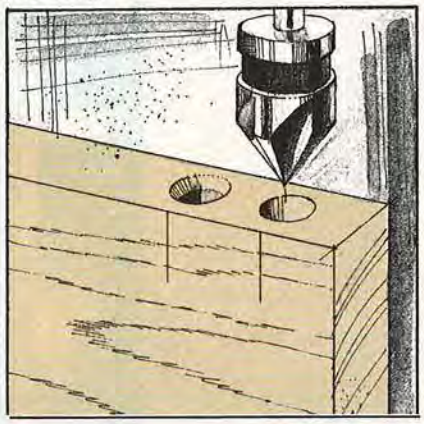
face. Tighten the thumbscrew that holds the guide in place.



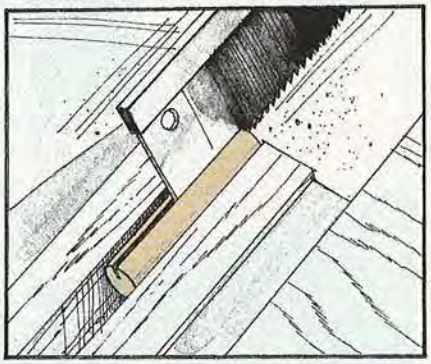
5 Determine the depth of the holes by dividing the length of your dowels in half and adding 1/16". The extra 1/16" provides clearance between the end of the dowels and the bottoms of the holes.

Now, place the drill bit into the guide so it contacts the workpiece. Measure from the end of the guide, and wrap masking tape around the bit at the proper hole depth as shown *below*.

6 After drilling the holes, chamfer them to a depth of 1/16" with a countersink bit. This helps you slide the dowels easily into the holes, and ensures a tight joint by providing space for wood debris around the hole rim.



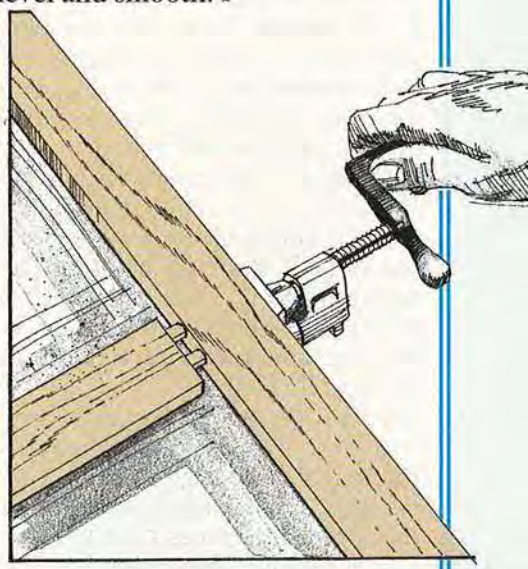
7 You either can buy commercially made dowels, or cut your own to length from dowel rod. If you make your own, you must cut two 1/16"-deep grooves along the length of the dowel, on opposite sides, to provide escape channels for air and glue (see illustration). Then, use a belt or disc sander to form a 1/16" chamfer on the dowel ends.



8 Apply glue to the insides of the holes, the dowels, and all mating surfaces. Use a small brush, thin wooden rod, or pipe cleaner.

Tap the dowels into the holes of one mating piece, align the adjoining workpiece, and use the slow, steady screwing action of your clamps to bring the joint together as shown *below*. Allow any trapped air or glue to escape.

Check for square, and make any necessary clamping adjustments. After the glue dries, sand the joint level and smooth.



Buying Guide

Stanley 04-059 Doweling Jig, $48.95 postage paid from Tools On Sale. Call 800/328-0457. For more information, write to: Stanley Tools, Customer Service Dept., 600 Myrtle St., New Britain, CT 06050.

Illustrations: Jim Stevenson

MASTERPIECE

BUILD THIS VERSATILE CABINET FOR YOUR

Need a handsome country entertainment center to hold TV and stereo equipment? Or, how about a traditional wardrobe for your bedroom? This sharp-looking cabinet, made from pine, can perform either role–and do it in style.

Let's start with the carcase assembly

1 Edge-join narrower stock to size to form the cabinet sides (A), bottom (B), and top (C) to the sizes listed in the Bill of Materials plus ½" in width and 1" in length.

2 Lay out the panels for the best grain match. Mark the edges that will receive the splines. See the Carcase Assembly drawing and Spline detail for reference.

3 Using a ¼" slotting cutter, rout ¼" slots, centered, along the marked edges of the panels. Stop the slots 2" from the ends for the top panel (C). See the Spline detail for reference. The slots in the Side and bottom panels go all the way through.

4 From ¼" stock (we used plywood), cut 15⁄16"-wide splines to the lengths needed to fit the routed slots. Cut or sand the ends of the top-panel splines to shape.

5 Glue, spline, and clamp the side panels (A), bottom panel (B), and top panel (C) together, checking that the panels remain flat. Remove excess glue.

6 Rip and crosscut the panels (A, B, C) to the finished sizes listed in the Bill of Materials.

7 To fit the shelf standards later, mark the locations, and cut a pair of ⅝" grooves ¼" deep 2½" from the front and back edges in the side panels.

IN PINE
COUNTRY-LOVING HOME

Adjustable shelves make this handsome project versatile enough to fulfill a number of storage needs.

It's time to assemble the carcase

1 Rip and crosscut the bottom front rail (D) and top front rail (E) to size from ¾"-thick pine stock.

2 Cut the cleats (F, G, H) to size. Drill and countersink the mounting holes through the cleats.

3 Position and square the side cleats (F) on the cabinet sides (A) where located on the Carcase Assembly drawing. Screw the cleats in place. Position and screw the top cleats (G) in place.

4 Dry-clamp the bottom and top panels (B, C) to the side panels. The back edge of both panels are flush with the back edge of the sides. The top panel overhangs both side panels by 3". Check for square and screw (no glue) the panels together.

5 Dry-clamp the rails (D, E) in place, drill countersunk screw holes, and glue and screw these pieces to the carcase.

6 Rout a ⅜" rabbet ¼" deep along the back inside edge of the assembled cabinet. Chisel the round-routed corners square.

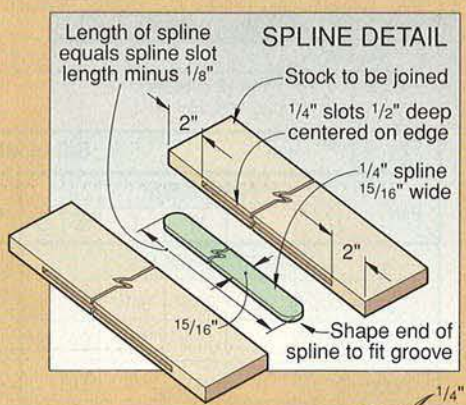
7 Measure the rabbeted opening, and cut the back (I) to size from ¼" hardboard. If you plan to use the cabinet for electronic components, bore ventilation and wire access holes. See the Carcase Assembly drawing for reference.

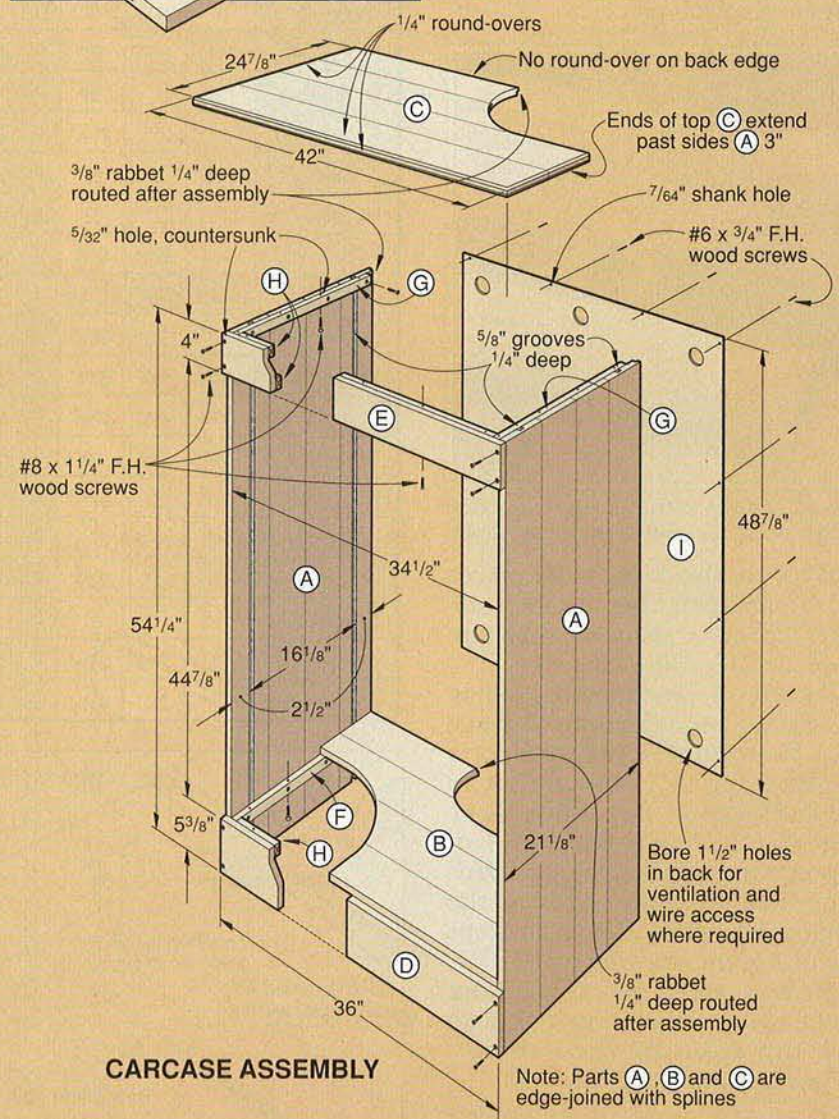
Next, add the decorative pine molding

1 Cut the bottom trim pieces (J,K,L,M) to size plus 1" in length.

2 Rout a ½" cove along the top front edge of the inner trim pieces (J, K). See the Lower Molding detail accompanying the Exploded View drawing for reference. Miter-cut the pieces and screw them (no glue) to the cabinet bottom.

Continued


Length of spline equals spline slot length minus 1/8"
SPLINE DETAIL
Stock to be joined
1/4" slots 1/2" deep centered on edge
1/4" spline 15/16" wide
2"
2"
15/16"
Shape end of spline to fit groove



CARCASE ASSEMBLY

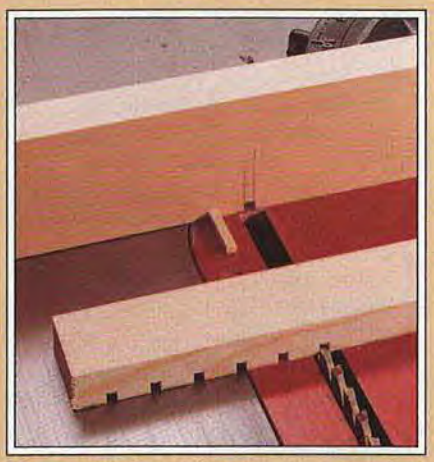
MASTERPIECE IN PINE

3 Rout a ½" bead along the top front edge of molding pieces (L, M). Miter-cut these pieces and glue them to the cabinet.

4 Cut the top trim pieces (N, O) to size, and screw (no glue) them to the top of the cabinet.

5 Cut dentil mold pieces (P, Q) to size plus 2" in length. Construct the jig shown *below right*. The *center* of the ⅛" kerf in the miter extension should be ½" from the center of the indexing pin.

6 Make one kerfing cut across the end of one of the dentil mold strips. Next, position this kerf on the indexing pin, and make the second cut. Repeat the process as shown in the photo *below* to make all the evenly spaced kerfs. Repeat for each piece.



Use a wooden miter-gauge extension with a guide for cutting the dentil mold.

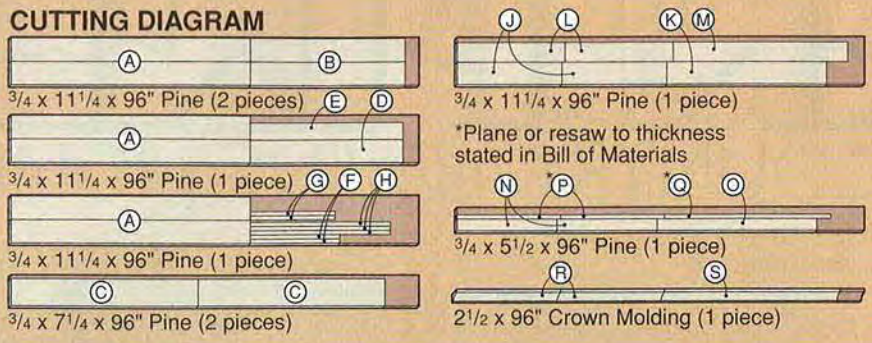
7 Miter-cut the dentil mold pieces (P, Q), and glue them to the cabinet where shown on the Exploded View drawing.

8 To add the pine crown molding (R, S), we purchased an 8' piece at a local homecenter. Select a straight, flat 2×4, and glue it to the back face of the crown molding where shown on Step 1 of Ripping the Crown Molding drawing. Now, rip the edges of the lamination where shown in Steps 1 and 2 of the drawing.

9 Measure and miter-cut the front piece (S) to length and glue it to the top front of the cabinet. Repeat for the side pieces (R).

Continued

CUTTING DIAGRAM



Bill of Materials

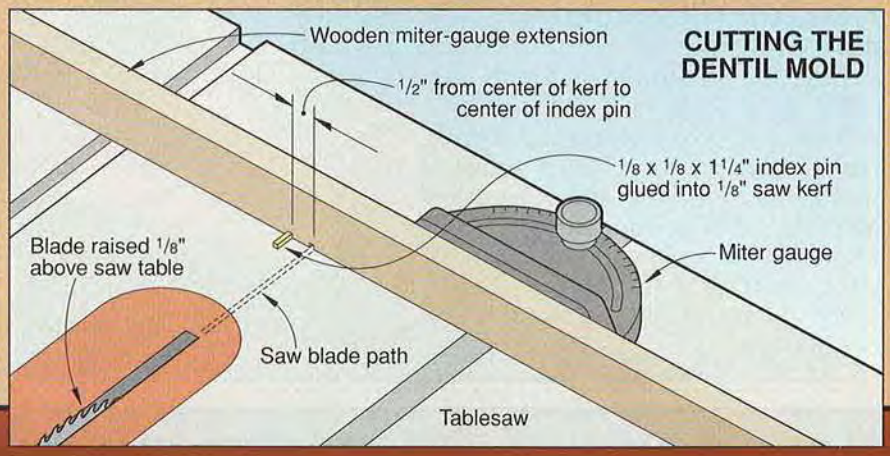
Part	Finished Size* T	W	L	Matl.	Qty.
CABINET CARCASE					
A* sides	¾"	21⅛"	54¼"	EP	2
B* bottom	¾"	21⅛"	34½"	EP	1
C* top	¾"	24⅞"	42"	EP	1
D btm. rail	¾"	5⅜"	36"	P	1
E top rail	¾"	4"	36"	P	1
F cleats	¾"	1"	21⅛"	P	2
G cleats	¾"	1"	20"	P	2
H cleats	¾"	1"	33"	P	3
I back	¼"	35¼"	48⅞"	H	1
MOLDING					
J* btm. sides	¾"	5¼"	22⅝"	P	2
K* btm. front	¾"	5¼"	37½"	P	1
L* btm. sides	¾"	4⅝"	23⅜"	P	2
M* btm. front	¾"	4⅝"	39"	P	1
N top sides	¾"	2¾"	22⅝"	P	2
O top front	¾"	2¾"	37½"	P	1
P* dentil mold	½"	1"	22⅜"	P	2
Q* dentil mold	½"	1"	37"	P	1
R* crown mold	1⅞"	2½"	24½"	P	2
S* crown mold	1⅞"	2½"	41¼"	P	1

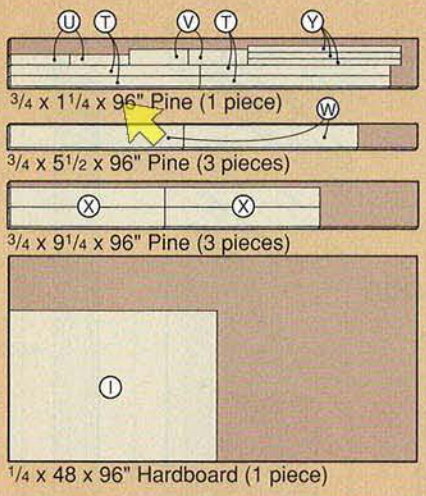
Part	Finished Size* T	W	L	Matl.	Qty.
DOORS					
T stiles	¾"	2½"	44¾"	P	4
U top rails	¾"	2½"	14"	P	2
V btm. rails	¾"	3¾"	14"	P	2
W* panels	¾"	13⅞"	39 7/16"	EP	2
SHELVES					
X* shelves	¾"	18"	34⅜"	EP	3
Y* fronts	¾"	1½"	34⅜"	P	3

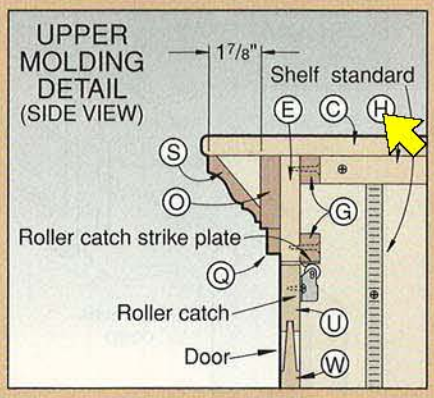
*Initially cut parts marked with an * oversized. Then, trim each to finished size according to the how-to instructions.

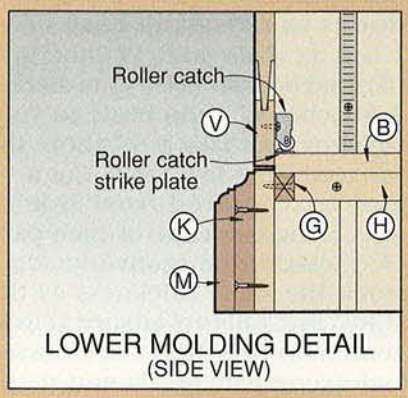
Materials Key: EP–edge-joined pine, P–pine, H–hardboard.

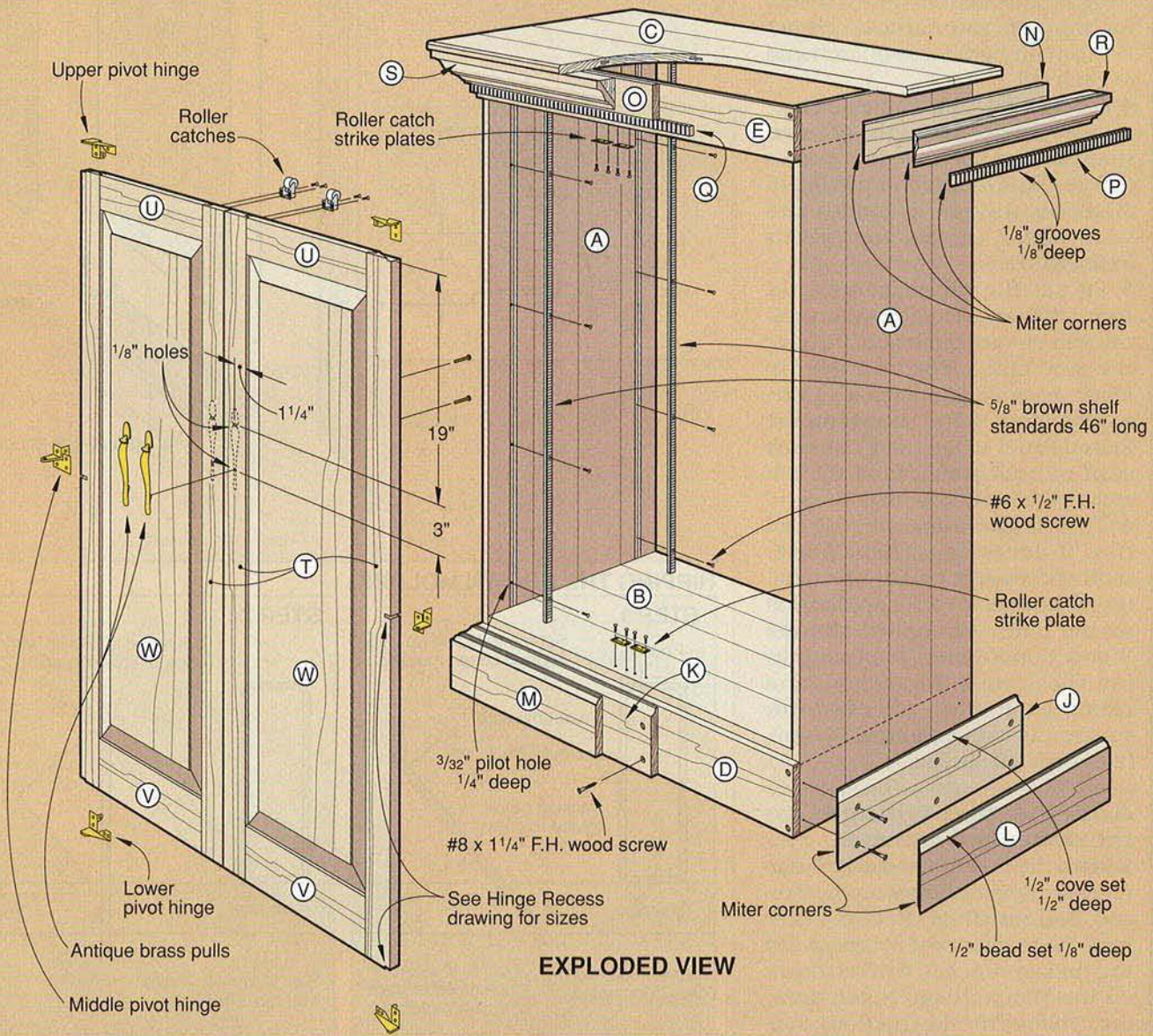
Supplies: #6x½" flathead wood screws, #6x¾" flathead wood screws, #8x1¼" flathead wood screws, 8' pine crown molding, cabinet top and bottom pivot hinges (Stanley catalog no. 331), cabinet middle pivot hinges (Stanley catalog no. 335), pulls (Amerock BP76271-R1), roller catches (Amerock BP9745-3), 4–⅝" brown or walnut finished shelf standards, wood conditioner, stain, clear finish.


CUTTING THE DENTIL MOLD
Wooden miter-gauge extension
1/2" from center of kerf to center of index pin
1/8 x 1/8 x 1 1/4" index pin glued into 1/8" saw kerf
Blade raised 1/8" above saw table
Miter gauge
Saw blade path
Tablesaw


U T V T Y
3/4 x 1 1/4 x 96" Pine (1 piece)
W
3/4 x 5 1/2 x 96" Pine (3 pieces)
X X
3/4 x 9 1/4 x 96" Pine (3 pieces)
I
1/4 x 48 x 96" Hardboard (1 piece)


UPPER MOLDING DETAIL
(SIDE VIEW)
1 7/8"
Shelf standard
E C H
S
O
G
Roller catch strike plate
Q
Roller catch
U
Door
W


Roller catch
V
B
Roller catch strike plate
K
G
H
M
LOWER MOLDING DETAIL
(SIDE VIEW)


Upper pivot hinge
Roller catches
Roller catch strike plates
S
C
O
E
Q
N
R
P
U
U
A
1/8" grooves 1/8" deep
A
Miter corners
1/8" holes
1 1/4"
19"
3"
5/8" brown shelf standards 46" long
#6 x 1/2" F.H. wood screw
T
B
Roller catch strike plate
W
W
K
M
J
3/32" pilot hole 1/4" deep
D
#8 x 1 1/4" F.H. wood screw
L
V
V
Lower pivot hinge
See Hinge Recess drawing for sizes
Miter corners
1/2" cove set 1/2" deep
Antique brass pulls
1/2" bead set 1/8" deep
Middle pivot hinge
EXPLODED VIEW

Now, construct a pair of doors to close the case

1 Cut the door stiles (T), top rails (U), and bottom rails (V) to size.

2 Attach a ¼" dado blade to your tablesaw, and raise it ½" above the surface of the saw table. Cut a ¼" groove, centered from side to side, along one edge of each part. (We test-cut the groove in scrap stock the same thickness as the stiles and rails to ensure it was centered.) See the Door drawing and accompanying Tenon detail for reference.

3 To cut the stub tenons on the ends of the rails, use a miter gauge with an attached wood extension for support, and cut a ½" rabbet ¼" deep on both faces of each end of each rail.

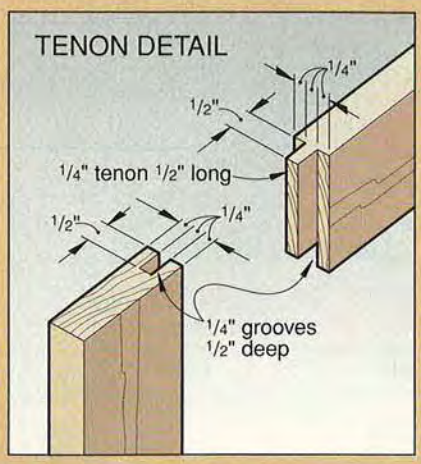
4 For stability and flatness, edge-join narrower, straight-grained stock to form the two door panels (W) to the size listed in the Bill of Materials plus 1" in length and width. Later, cut the door panels to finished size.

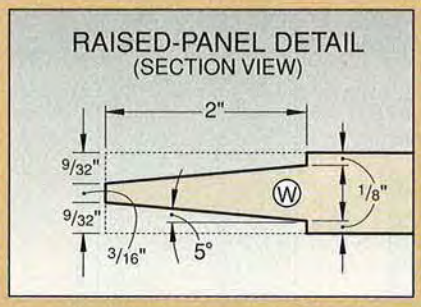
5 To cut the raised panels, tilt your tablesaw blade 5° from vertical, and elevate the blade 2" above the saw table. Position the rip fence, test-cut scrap stock to create the same shape shown on the Raised-Panel detail, and cut each edge of each panel. Sand the cut areas to remove saw marks.

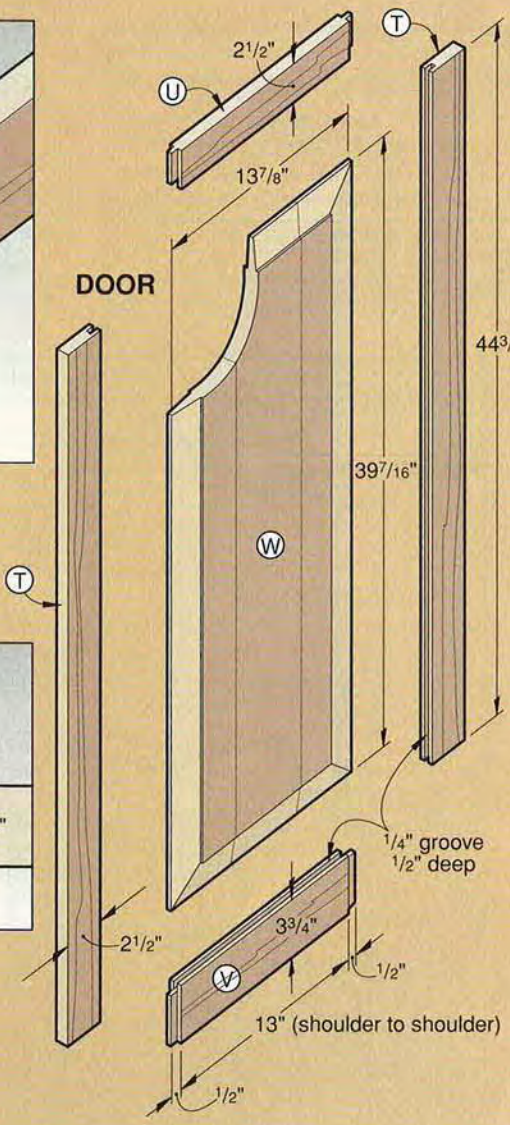
6 Test-fit the door pieces, and trim if necessary. Then, finish-sand the panels and stain them. (For a more even stain application on the pine, we applied Minwax Wood Conditioner before applying the stain.) Then, glue and clamp each door, checking for square. Rest the clamped assemblies on a flat surface.

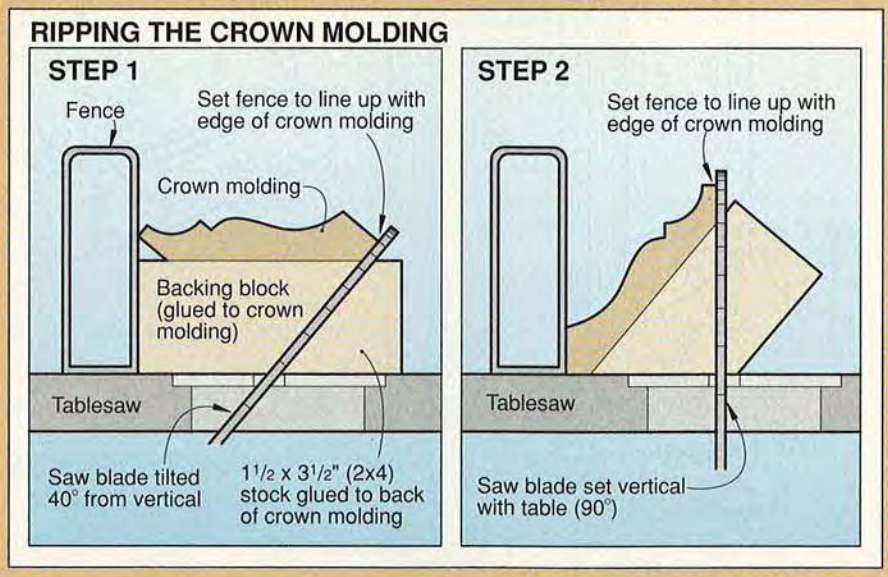
Add the pivot hinges to the doors and carcase

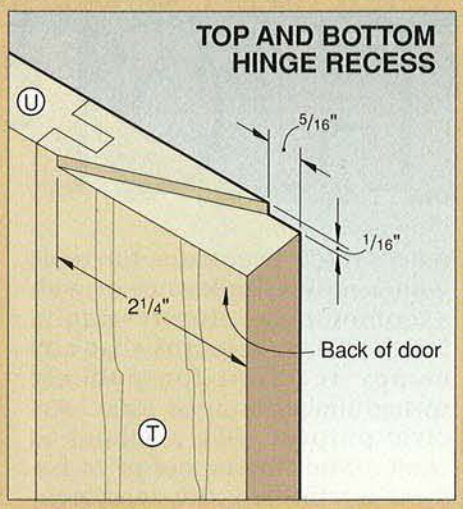
1 Mark the upper and lower hinge recesses where shown on the Top and Bottom Hinge Recess drawings. Then, mark the locations for the middle notches where shown on the Middle Hinge Notch drawing. Follow the instructions supplied with the pivot hinges to

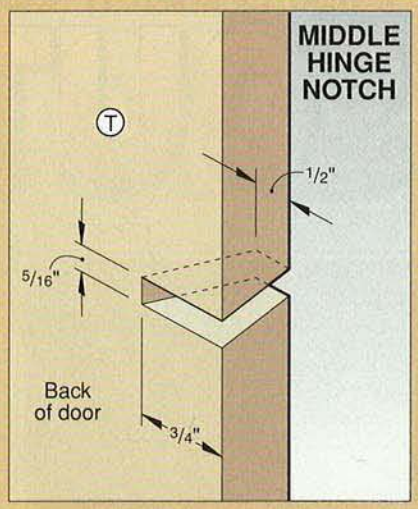


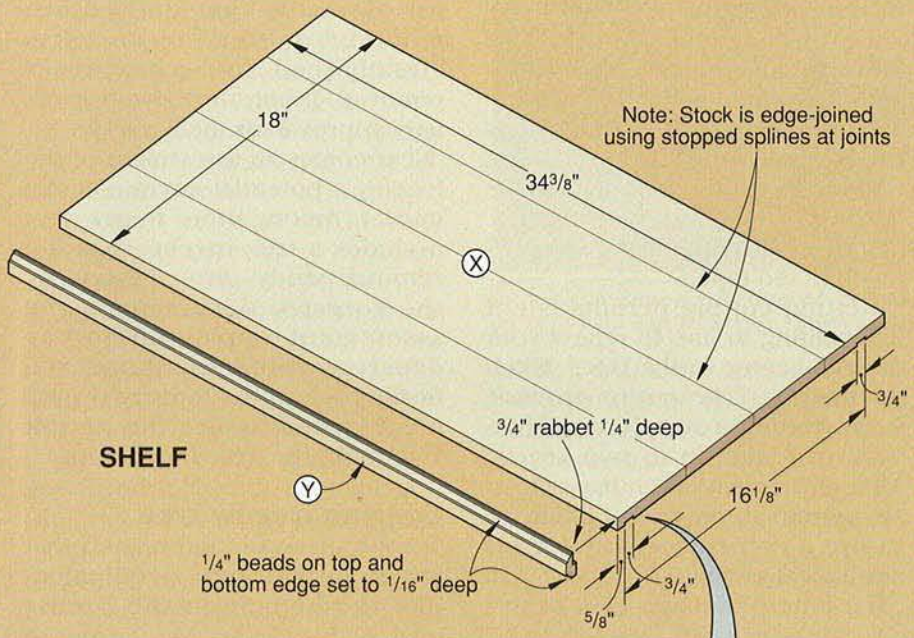


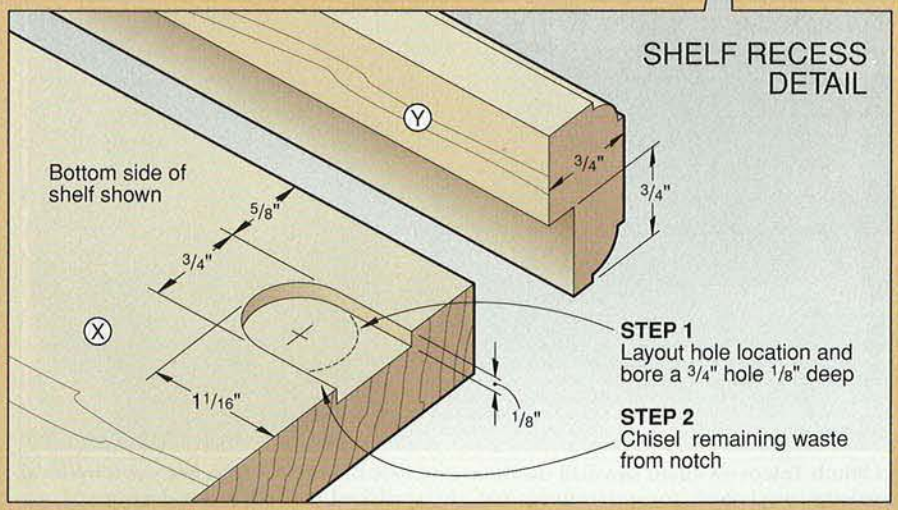



RIPPING THE CROWN MOLDING
STEP 1
Fence
Set fence to line up with edge of crown molding
Crown molding
Backing block (glued to crown molding)
Tablesaw
Saw blade tilted 40° from vertical
1 1/2 x 3 1/2" (2x4) stock glued to back of crown molding
STEP 2
Set fence to line up with edge of crown molding
Tablesaw
Saw blade set vertical with table (90°)









form the top, bottom, and middle hinge recesses and notches.

2 Mount the hinges to the doors, and fasten the hinges to the cabinet. Mount the roller catches to the doors and cabinet. Drill the holes for the pulls. Attach the pulls and catches.

3 Crosscut the shelf standards, and install them in the cabinet.

Add the shelves and finish

Note: *The shelves are dimensioned to allow a little over an inch of clearance between the back edge of the shelf and the front edge of the back piece (I). The gap allows passage for the cords from your electrical components to the wire-access holes.*

1 Using the same procedure you used to form the panels for the side, bottom, and top panels, edge-join and spline enough pine stock for the number of shelves (X) that you'll need.

2 Cut the shelves to fit between the shelf standards.

3 Cut the shelf fronts (Y) to size plus 1" in length. Cut a ¾" rabbet ¼" deep along the back edge of each. See the Shelf Recess detail for reference. Glue and clamp a front to each shelf.

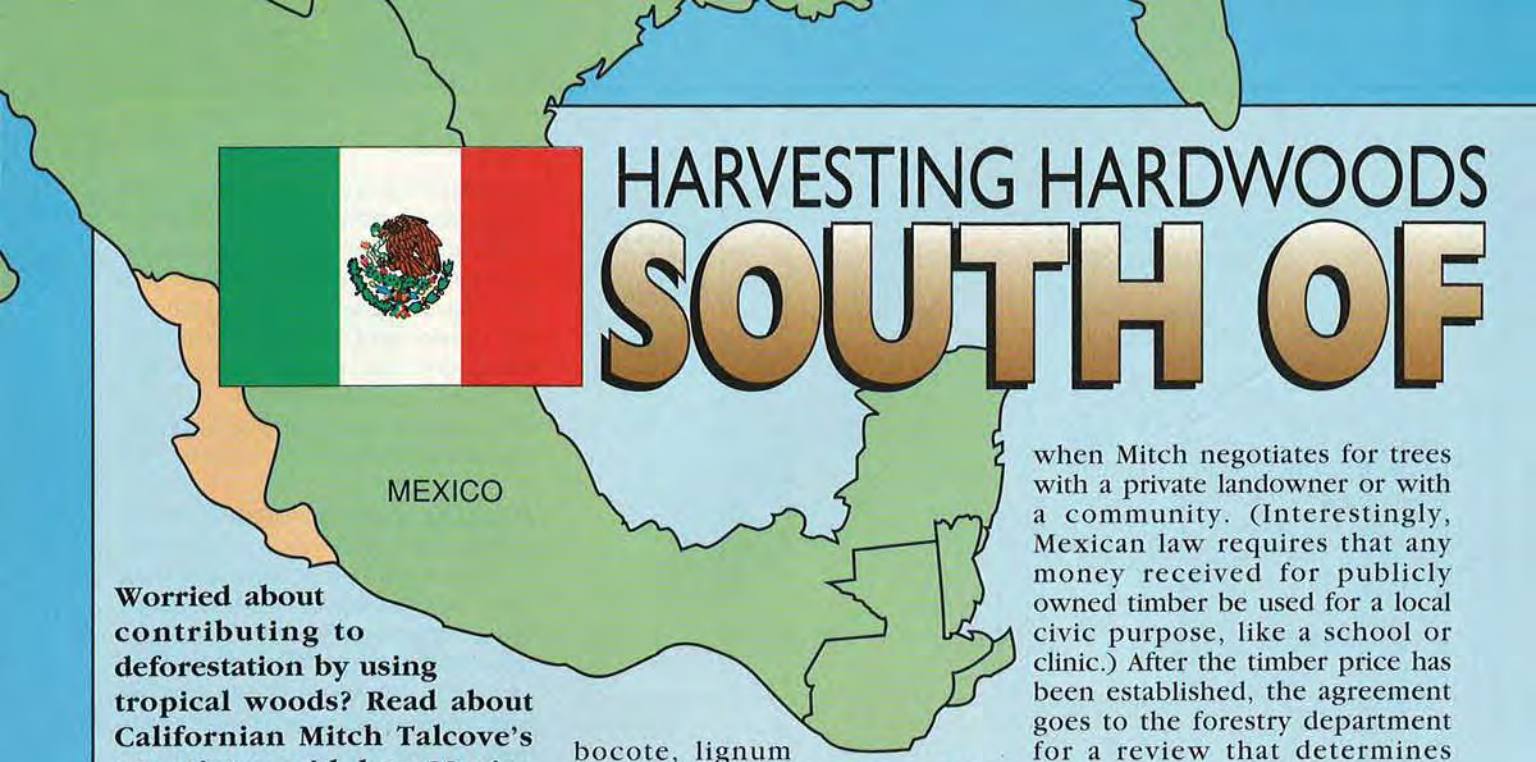
4 Rout ¼" beads along the front edge of each shelf front. Trim the ends of the shelf fronts flush with the ends of each shelf.

5 Fit the clips on the shelf standards. Form clip recesses on the bottom of each shelf where dimensioned on the Shelf drawing and Shelf Recess detail.

6 Remove all the hardware from the cabinet and doors. Remove the back (I) from the cabinet. Finish-sand all the pieces. Apply wood conditioner, and then stain and finish. (We used Minwax Wood Conditioner, Puritan Pine stain, and satin polyurethane.)

7 Reattach the hardware and hang the doors. Screw the cabinet back in place.

Produced by Marlen Kemmet
Project Design: James R. Downing
Photographs: Wm. Hopkins
Illustrations: Kim Downing



HARVESTING HARDWOODS SOUTH OF

Worried about contributing to deforestation by using tropical woods? Read about Californian Mitch Talcove's experience with how Mexico protects its trees and plans for the future by managing for sustained yield.

Mitch Talcove, 43, owns Tropical Exotic Hardwoods in Carlsbad, California, a company he started in 1978 after noting the growing interest in exotic woods among American woodworkers. But his interest in Mexican wood goes back to the early 1970s when he worked in the country as a carpenter, an experience that familiarized him with Mexican forestry laws. Mitch now ranks as one of the nation's longest established exporters of south-of-the-border stock. For him, though, getting it home has never been harder.

Tough laws protect trees

Most of the wood that Mitch sells comes from Mexico's west coast. There, like everywhere else in the country, logging is strictly controlled and regulated by local and federal agencies. "Legally," Mitch says, "you can't cut a tree anywhere in Mexico—even if you own the property—without a forestry department permit."

According to Mitch, the country's tough forestry regulations are designed to limit the removal of prized woods, such as cocobolo, bocote, lignum vitae, primavera, and others. The Mexican government also encourages sustained-yield forest management—a practice that keeps the forest continually producing timber. To do this also means the cutting of lesser-known species. Yet harvesting any species involves red tape.

"Getting cutting permits is not like waiting in line to renew your driver's license in the U.S.," Mitch comments. "The entire process, from finding a supply until harvest, can take up to two years!" That means that Mitch has at least six permits in process at a time to assure a constant supply for his small local sawmill.

The long permit process begins when Mitch negotiates for trees with a private landowner or with a community. (Interestingly, Mexican law requires that any money received for publicly owned timber be used for a local civic purpose, like a school or clinic.) After the timber price has been established, the agreement goes to the forestry department for a review that determines whether or not the area has already had too many trees removed. If not, they give preliminary approval for the harvest.

Next comes an assessment of the logging's potential environmental impact. Among other things, that includes a tree inventory and a removal study. After review by the forestry department, the assessment moves on to the department of agriculture, and finally back to the forestry department, which issues the permit and marks the trees for harvest.

Logging tree by tree

"People have the impression that we go in with heavy equipment like the loggers in the Pacific

At Mitch Talcove's small sawmill on the west coast of Mexico, logs are sawn by local workers into boards for maximum yield, then trucked to the U.S. for drying.

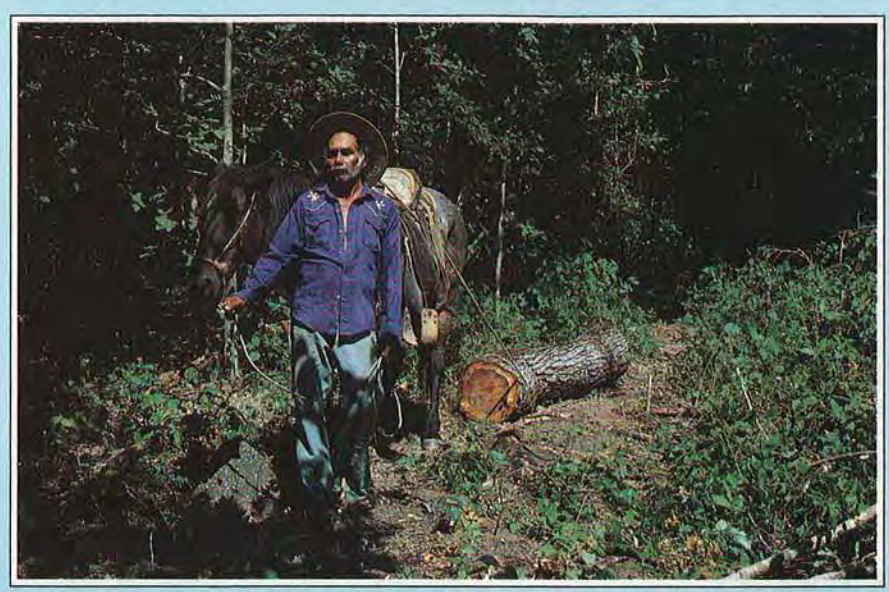
THE BORDER

Northwest, that we clearcut an entire area," Mitch comments, grimacing. "This is neither legal in Mexico nor practical for the few trees—about 10-15 per square mile—that we are allowed to cut in the hilly terrain."

So, how do they do it? With horses or mules and manpower. "My crew of 10 men climb for hours to the area of marked trees, then fell them with a chain saw, leaving the stump as a source of secondary growth," says Mitch.

"A typical cocobolo tree is skinny—about 16" in diameter and 75' tall—and contains about 150 board feet of good wood after milling away the waste," he notes. "The men cut the trees into 3'-7' logs that can be moved out of the forest by hand or animal. The law requires us to saw any remaining branches into small pieces that will decay.

"The draft animals drag the logs down the hills to a 1-ton pickup truck which then transports them to a semi at the closest highway," he continues. "Although this process takes extra days, the surrounding natural growth is protected. And to help ensure sustained yield, recent laws require replacement of removed trees with seedlings, paid for and planted by the permit holder."



No heavy machinery is allowed in Mexican forests. Logging crews use horses or mules to haul logs down the slopes to the nearest road.

Be legal or be jailed

The penalties for breaking Mexican forestry laws,—jail and confiscation of equipment—guide Mitch and his crews. For from harvest to exporting, the government has enacted safeguards to keep tabs on wood. For instance, workers must carry permits describing the wood they are allowed to cut, its location, the date it will be felled, the time of transport, the license number of transporting vehicles and drivers' names, and the location of the sawmill. And, Mitch says, the forestry department, agriculture department, local and federal police, as well as the army, can and do periodically check permits.

"Any changes or delays must be reported and written extensions issued," notes the importer. "This is a problem when one of our trucks gets stuck in rainy season mud. We simply can't transfer the load to another truck until we get our permit changed. To avoid that, we try to cut in the dry season that runs from early November to early June."

Even the mill must follow the letter of the law. Mexican regulations require that wood be machined on all four sides before exporting, a means to encourage local employment. To some sawyers, that means just sawing off the bark in slabs, then shipping the resulting cant. At Mitch's mill, all logs are sawn for maximum yield, then milled into boards for trucking to the U.S. But even at the mill, as well as enroute home for drying, the wood is subject to government inspection. To Mitch, that's okay.

"As a buyer, I want to be certain that the forest in general is protected, and that specific species are well managed," Mitch explains. "But all woodworkers need to be more aware of the source and harvesting methods of woods they use, and encourage the management of exotic woods as a sustainable resource."

For a list of imported wood species Mitch stocks, send a self-addressed, stamped envelope to: *Tropical Exotic Hardwoods, Dept. G, P.O. Box 1806, Carlsbad, CA 92008.*

Written and photographed by Gary A. Zeff

SAVE SOME WOOD; BEAUTIFY A BOWL

RUN RINGS AROUND

Here's a clever way to get double duty from one bowl blank: Rough out the bowl by cutting rings out of the waste areas, then use those rings as decorative inlays in other turnings. In this case, your conservation yields a conversation piece.

Woodturners often do a double-take when they spot a bowl or plate turned by Lane Phillips. At first glance, Lane's two-toned vessels, like those *below*, appear to be laminated work, or perhaps staved turnings.

But on close inspection, details start to click: That band of different wood—it's perfectly round. And it's solid, not segmented. Wait a second! The accent band doesn't show on the inside of the bowl or the underside of the plate, either. How did he do that?

Lane achieves the intriguing effect by inlaying—inserting a wooden ring into a groove cut into the turned piece. At his studio in the mountains near Spanish Fork, Utah, he recently constructed a bowl with an inlaid rim to demonstrate the process for *WOOD*® magazine readers.

Not just a pretty technique

While the inlaid rings add spice to a plain plate or bowl, Lane wasn't looking for a decorative technique when he developed the process. He was looking for a way to make better use of wood.

"Most of a $75 chunk of cocobolo or whatever you're using ends up as waste when you turn a bowl," Lane points out. Rather than letting it all pile up as chips, he wanted to salvage some of that wood. So he started cutting rings from his blanks as the first step in roughing out a bowl (see illustration, *opposite page*). To put the rings to use, he turned to inlays.

Now, Lane may cut 20, 30, or even more rings from a blank, as shown *opposite page* before turning the outside of the bowl. Later, when he remounts the blank, he can cut some more rings from the inside of the bowl. Thus, the blank yields a bowl plus an assortment of decorative inlay rings.

Print this article

PLAIN BOWLS

"That's the main reason to be excited about this," Lane says. "It makes your wood go further." While he cuts a lot of cross-grain rings from bowl blanks, Lane also takes some end-grain ones from stock mounted between centers—when turning an urn, for instance. "End-grain rings are not only attractive," Lane says, "they hold their true round shape better than cross-grain rings."

First thing, make the rings

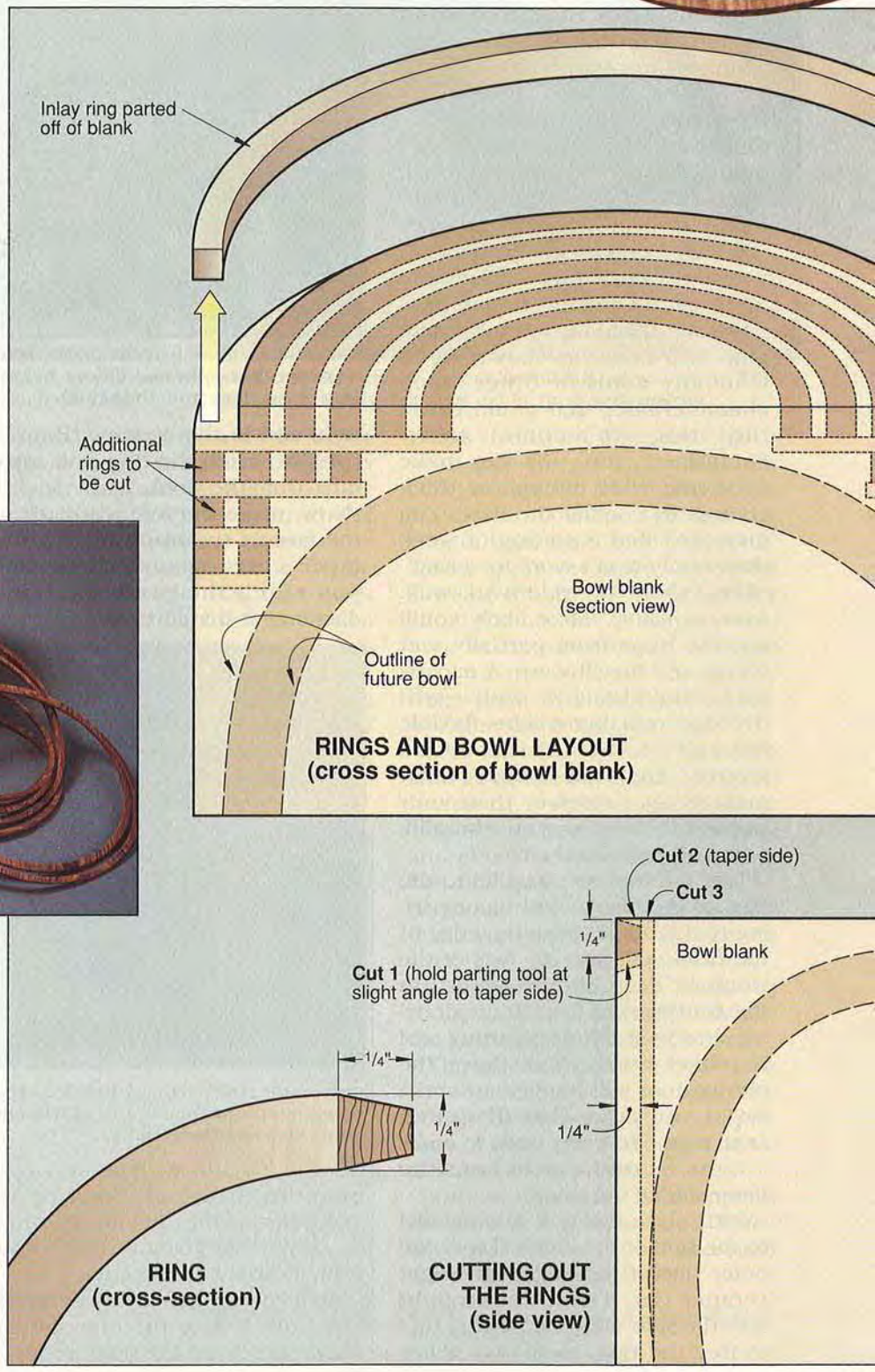
Following Lane's procedures and working carefully, you can embellish practically any turning this way. Here's how to fit an inlay into a bowl rim:

A bowl blank awaits turning after yielding an assortment of rings for inlays.

The process begins with turning an assortment of rings. This simplifies fitting the inlay later—forming a groove to accept an existing ring is much easier than turning a precisely sized ring to fit into an already-made groove.

Start by selecting the woods for your inlay and bowl. For photography, Lane turned a silver maple bowl with a cocobolo inlay. But, he doesn't always strive for such a strong contrast between the bowl and the inlay. "Similar colors like

Continued



cocobolo and cherry look terrific together," Lane says, as do opposite colors such as yellow (black locust) and purple (purpleheart)." He avoids mixing grains, prefering burl inlays for burl bowls and straight-grain inlays for straight-grain turnings.

Become a ringmaster

Center a faceplate or screw chuck on top of the bowl blank that will yield the rings. With a gouge, round the blank and true the face.

Look for cracks in the blank—you must repair them before you try to cut off any rings. Lane fixes flaws by dribbling cyanoacrylate glue into them, as shown *right*. Glue any voids or other stock characteristics that could cause the ring to come apart. Sometimes, too, you can make your ring wide enough or thick enough to contain the flaw. You may even find a portion of stock that simply won't work for a ring.

Rings about ¼" wide work well. Lane explains: "Most likely you'll cut the rings from partially wet wood, and they'll warp. A narrow ring—one about ¼" wide—will dry to an oval, but will be flexible enough to fit into a round groove." And, Lane reminds, don't make rings narrower than your parting tool—you won't be able to cut grooves for them.

Place the tool rest parallel to the face of the blank. With your parting tool ¼" or so from the edge of the blank, cut into the face of the stock, ¼" deep, shown as Cut 1 in the Cutting Out The Rings drawing. Use your thinnest parting tool to reduce waste. "Sometimes, the parting tool will bounce around a bit as you make that first cut," Lane says. "You may need to make a light second cut to true the inner side of the ring."

Next, place the tool rest parallel to the side of the blank. Taper the outer side of the ring with a light scraper cut. Then, cut straight into the side with the parting tool to free the ring, as shown *above right* and in the drawing. Be prepared to catch the ring as it separates from the stock.

Lane Phillips glues hairline cracks with cyanoacrylate adhesive before beginning to cut rings from the blank.

Now, move the tool rest back to the face of the blank to start the process over again. Continue until you reach the predetermined diameter at that level, then start at the edge again to cut the rings from the next level. Don't try to make those rings identical to the ones you've already cut—you want a variety of ring sizes.

Removing rings from a blank helps rough out the shape for a bowl without piling up a lot of waste chips.

You'll end up with a stair-stepped bowl blank, like the one shown *above*. Set it and the rings aside.

Cut into the face to set the ring's width. Then, cut from the side to establish thickness and release the ring.

Time to turn a bowl

With the rings ready, you now need a bowl to put one in. Using your customary method, turn the outside of the bowl to its finished diameter. (see *WOOD* magazine, December 1992, for more on bowl-turning basics).

Hollow out the bowl, leaving walls at least ½" thick—a little thicker is even better. A thick bowl wall at this point gives you greater latitude in selecting a ring to fit. Measure the bowl's outside diameter at the rim.

Select an inlay ring about ¼" smaller in diameter than the outside diameter of your bowl. (This allows a ⅛" margin around the outside of the ring, shown in the illustration *right*.)

Feelin' groovy

Place the toolrest across the end of the bowl, and true the rim. Then, with the lathe running, hold a pencil against the rim to mark several circles for the outside diameter of the ring. Stop the lathe and hold the ring against the rim to find the circle that's closest to the size of the ring.

Draw more rings to mark the ring's inside diameter. Pick the one that matches the ring best. You should now have a pair of

Initially turn a thick-walled bowl—½" or thicker. As you cut the groove into the rim, taper the sides to match the ring.

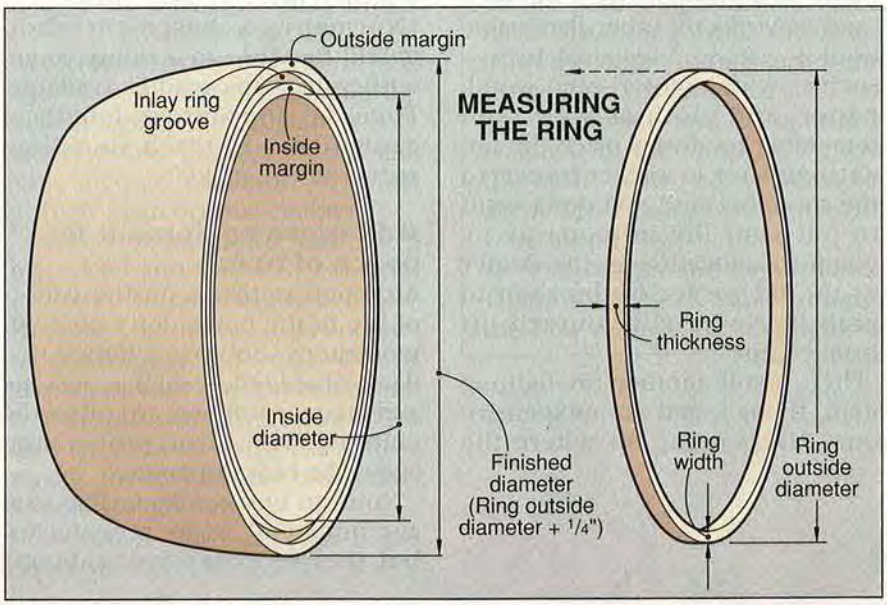
Test-fit the inlay in the groove frequently as you work. The ring must fit tightly, but need not be flush with the rim.

concentric circles marking the location of the ring inlay.

With a parting tool, cut straight into the rim, staying safely between the lines, as shown *above*. Establish the width of the groove with shallow parting-tool cuts. Check the ring's fit in the groove frequently, then adjust the groove as necessary. Take tiny cuts as you make adjustments.

For easier fitting of a warped ring, Lane trims the bowl rim on a slight slant down to the outside. When he cuts the groove on the slanted surface, it leaves the inside top edge of the groove slightly higher than the outside. Then he can hook the ring around the ledge to fit it into the groove.

As you cut the groove to depth, taper the sides to match the taper of the ring. "This way, you can tighten a loose-fitting ring by cutting the groove deeper," Lane explains. Check the fit of the ring frequently, as shown *above right* Ideally, the ring will stand slightly above the bowl rim with no gaps at the inside or outside.



Glue the fitted inlay into place with gap-filling cyanoacrylate (CA) adhesive. First, spray CA accelerator on the sides of the ring (a light mist is all you need). Then, apply the thick CA to the sides of the groove. Don't worry about the bottom of the groove—your inlay may not reach all the way to the bottom. Align the ring's grain with the bowl's grain, and carefully install the inlay.

Lane seals the joint lines with thin (regular) CA adhesive followed by a shot of accelerator. This works best with the turning and chuck or faceplate dismounted from the lathe.

Remount the bowl, then true the inlaid rim with a light cut. Finish-turn the inside of the bowl. Enlarge the diameter inside or reduce it on the outside to center the inlay on the rim, if necessary.

"Though the inlaid rim is ½" thick or so, that doesn't mean the whole bowl needs to be," Lane says. "I like a rim that tapers down to a wall about ¼" thick."

Sand as necessary, and apply a clear finish inside and out. When dry, part off the bowl, and sand and finish the bottom.

Written by Larry Johnston with Lane Phillips
Photographs: Gary Zeff
Illustrations: Kim Downing

Print this article

You don't have to spend a bundle to be ready

SIMPLE STRATEGIES TO SAVE YOUR SHOP FROM FIRE

Sure, you can add sophisticated and expensive systems like heat sensors and sprinklers to your shop for fire protection. But all it really takes to fight fire—as well as prevent it—is common sense and some pretty ordinary equipment.

Robert Benedetti works out solutions for fire-related problems in business and industry every day, as he has for years. That's because he's a senior engineer for the National Fire Protection Association in Quincy, Massachusetts. Bob is also a hobby woodworker and a do-it-yourselfer. So when he talks about home-shop fire protection, he speaks from experience.

Your first line of defense

According to Bob, what works in commercial or industrial situations in case of fire works at home, too. "I subscribe to the theory that if you have a fire, you call the fire department first. Then, if you know what you're doing, you try to extinguish the fire. In industry, the first line of defense always is to sound the alarm." Following that advice means that you should post the number of your fire department (or 911), along with other emergency numbers, close to the telephone, and consider it an essential item in your fire-protection equipment.

Smoke detectors also should be part of your alarm system. "The home woodworker should look toward multilevel smoke detection," suggests Bob. "That means a smoke detector at each floor of the structure." (Battery-operated smoke detectors only cost about $10 each.)

But what about extinguishing the fire? Of the several types of fire extinguishers available, Bob names two for the home workshop. "A Class A pressurized-water extinguisher [about $65 for one of 2½-gal. capacity] works well for fighting fires in cloth, wood, and other ordinary non-liquid, non-electrical combustibles."

The second of Bob's recommendations does it all. "A 10-lb. dry-chemical, A-B-C-rated fire extinguisher [about $50] will put out a paint or a varnish fire," he says, "and it works on other flammable liquids, grease, electrical fires—such as with a motor—and wood, paper, and cloth as well. And remember to always place the fire extinguisher at the entrance to the room because you don't want to put your life in jeopardy by going to a location in the center or the far corner of the shop to grab it. Never cut yourself off from escape."

There's still another fire-fighting item, though, and an inexpensive one. "Depending on where the shop is located, you could have a hose with a nozzle connected to a valve tap on a cold-water line," he adds. "Normally, a basement shop would be close to a utility room, with valve taps readily available. Then, an appropriate length of garden hose to reach your shop area is all you need."

Add more equipment for peace of mind

Although statistics on the causes of fire in the home don't pinpoint workshops, Bob has a hunch that flammable liquids, such as acetone and lacquer thinner, are often the culprits. With them, proper storage is the best insurance.

"You can buy nonflammable storage units and waste receptacles, but they're expensive [cabinets

cost $300 and up; a six-gallon capacity waste container, about $50]. But if you normally work with flammable finishing materials, they're worth the investment. In lieu of them," he says, "always store flammable liquids in tightly closed, metal containers. Never keep even dirty solvent, such as turpentine or brush cleaner, in an open container.

"Some finishing oils, including linseed oil and tung oil, have the tendency to self-combust under the right conditions, if left open," he continues. "So you want to keep all of your oily cloths in a lidded metal container, too. The alternative is to hang the cloths outside for several days until they completely dry."

But, even if you put all of Bob's advice into practice, don't expect big reductions in your homeowner's insurance premium. "Most of your premium payment goes for liability," he comments, "not for fire coverage. Although having fire protection equipment does knock something off the cost, it's not a heck of a lot. The payback, more than anything, is really peace of mind."

Want to learn more about fire protection?

Write for a free catalog listing educational material. Send your request to: *National Fire Protection Association, P.O. Box 9101, 1 Batterymarch Park, Quincy, Mass. 02269-9101.*

How to retire a fire with an extinguisher

Knowing how to use a fire extinguisher properly to fight a fire can mean the difference between saving your shop or watching it go up in smoke. A lack of know-how, on the other hand, could lead to personal injury, while a lack of preparedness could doom your shop.

Equip your shop with an A-B-C-rated fire extinguisher and keep it by the door leading into your shop. It's also a good idea to have a phone and a flashlight installed in the shop, again, by the door. Now, here's what to do when the temperature in your shop rises:

1. First, call the fire department. Then, if it looks feasible to fight the fire, remove the extinguisher from its mount and check to make sure it is full.
2. Stand back 8' from the fire, pull the extinguisher's ring, and remove the hose from the holder on the container.
3. Aim the hose at the absolute base of the blaze, then squeeze the handle and lever together to start the chemical stream flowing from the nozzle.
4. Sweep the fire with the stream in a side-to-side motion, advancing as the fire diminishes.
5. When the flame is out, overhaul the area of the fire, searching for hot spots to put out.
6. Stand back from the fire area and watch the debris carefully until you're absolutely positive that it won't reignite.

Written by Peter J. Stephano Illustration: Brian Jensen

Now-you-see-it, now-you-don't

FINISHING CENTER

When we designed the *WOOD* magazine IDEA SHOP, floor space was at a premium. That's why we decided to go with the wall-hung cabinet shown here. It features a fold-down worktable that rotates on a lazy Susan bearing, allowing you to apply an even coat of finish on all sides of your project without repositioning it. And, a support arm attached to the cabinet door lets you do the same with small projects or parts. Then, when you're through for the day, just lift up on the worktable, stash it back in the cabinet, and close the door.

Start with the plywood cabinet assembly

1 From ¾" maple, cut the cabinet sides (A) and top and bottom (B) to the sizes listed in the Bill of Materials on the *opposite page.*

2 Cut a ¾" rabbet ⅜" deep across the ends of the cabinet sides (A).

3 Switch to a ½"-wide dado blade, and cut a ½" rabbet ⅜" deep along the back inside edge of all four cabinet pieces (A, B).

4 Dry-clamp the cabinet pieces, measure the opening, and cut the back (C) to size from ½" plywood. Remove the clamps.

5 Glue and clamp the basic cabinet (A, B) together, checking for square. While the glue is still wet, attach the back (C) with 4d finish nails and glue. The plywood back helps hold the unit square until the glue dries. Remove any glue from the inside of the cabinet with a damp cloth. For added strength, drive a pair of 6d nails at each corner where shown on the Exploded View drawing. Set the nails and fill the holes with putty.

6 To hold the drop-down table assembly in the cabinet later, cut the spacer (D) and knob (E) to shape. See the Parts View drawing for the full-sized knob pattern. Drill a 5⁄32" hole centered in the spacer. Drill and countersink the same sized hole in the knob.

7 Mark the hole centerpoints, and drill a pair of holes for the round magnetic catches and wood screws in the cabinet sides (A) where shown on the Exploded View drawing. You'll add the catches, knob, spacer, and strike plates later.

Now, let's add the drop-down table

1 Cut the table (F), table support (G), and turntable (H) to size and shape. See the Parts View drawing for reference when marking the layout for parts F and G.

2 Using the radius centerpoint you laid out for the end of the table (F), center a 12"-diameter lazy-Susan bearing on top of the table (F). Use two screws to temporarily hold the bearing to the table top. Next, mark the centerpoint, and drill a screw-access hole through the table. The access hole in the table allows you to work from the bottom of the table later to screw the lazy Susan bearing to the bottom side of the turntable (H).

3 Drill mounting holes in the bottom edge of the table support (G) for the adjustable feet (see the Exploded View drawing).

Continued on page 48

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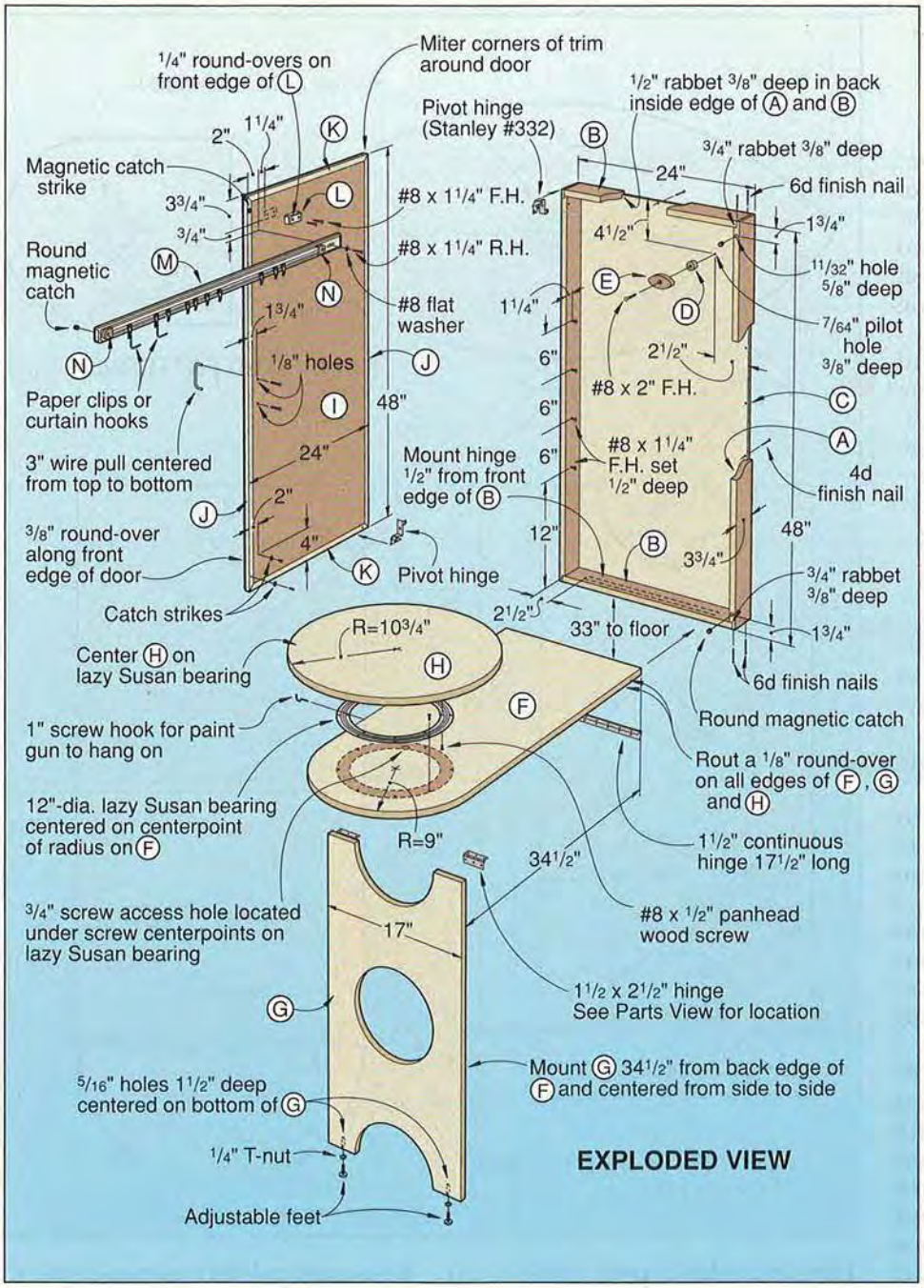


Bill of Materials

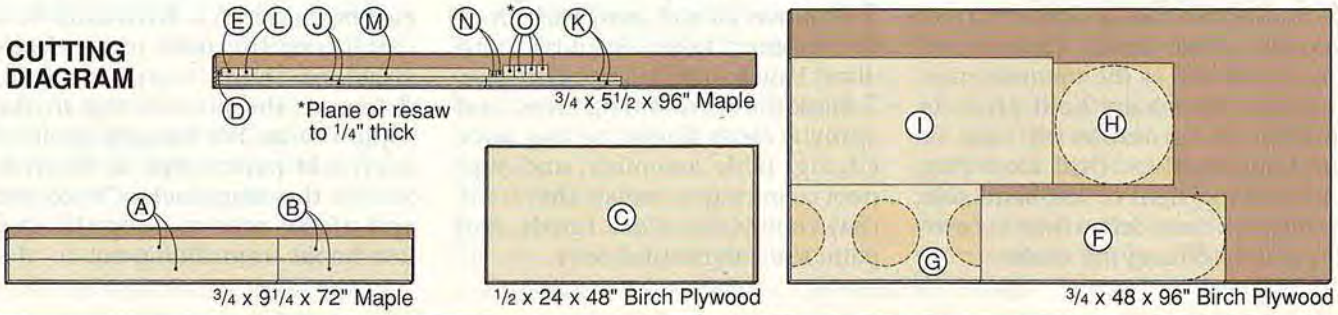
Part	Finished Size* T	W	L	Matl.	Qty.
CABINET					
A sides	¾"	3¾"	48"	M	2
B top & bottom	¾"	3¾"	23¼"	M	2
C back	½"	23¼"	47¼"	BP	1
D spacer	¾"	1" dia.		M	1
E knob	¾"	1⅜"	3"	M	1
TABLE ASSEMBLY					
F table	¾"	18"	43½"	BP	1
G table	¾"	17"	33¾"	BP	1
H turntable	¾"	21½" dia.		BP	1
DOOR					
I panel	¾"	22½"	46½"	BP	1
J* edging	¾"	¾"	48"	M	2
K* edging	¾"	¾"	24"	M	2
SUPPORT ARM					
L stopblock	¾"	1½"	2½"	M	1
M support arm	¾"	1½"	42"	M	1
N ends	¾"	1"	1¼"	M	2
O finish chairs	¼"	2"	2"	M	4

*Initially cut parts marked with an * oversized. Then, trim each to finished size according to the how-to instructions.

Materials Key: M–maple, BP–birch plywood

Supplies: 4d finish nails, 6d finish nails, 3 round magnetic catches and strikes, cabinet pivot hinges (Stanley #332), 36" length of curtain rod, paper clips or curtain hooks, #6×½" flathead wood screws, #8×1" flathead wood screws, #8×1¼" flathead wood screw, #8×1¼" roundhead wood screw and flat washer, #8×½" panhead wood screws, #8×2" flathead wood screws, 3" wire pull (handle), 12"-diameter lazy Susan bearing, one pair of 1½×2½" hinges, 1½" continuous (piano) hinge, 1" screw hook, pair of adjustable feet and ¼" T-nuts, enamel paint, clear finish.

CUTTING DIAGRAM


E L J M N O K
D
*Plane or resaw to 1/4" thick
3/4 x 5 1/2 x 96" Maple
A B
3/4 x 9 1/4 x 72" Maple
C
1/2 x 24 x 48" Birch Plywood
I H
G F
3/4 x 48 x 96" Birch Plywood

Now a door to keep the dust out

1 Cut the door panel (I) to size. Cut the door edging (J, K) to size plus 2" in length. Then, miter-cut the stiles and rails, and glue and nail them to the door panel. Drill the wire pull (handle) mounting holes through the door.

2 Drill the mounting holes and add a pair of pivot hinges to the cabinet and door to check the fit. See the Mounting The Pivot Hinge drawing and the hinge manufacturer's instructions for reference. Remove the hinges for now.

Add the support arm and the finish chairs

1 Cut the stopblock (L), support arm (M), and end pieces (N) to size and shape. See the Parts View for help with the end pieces (N).

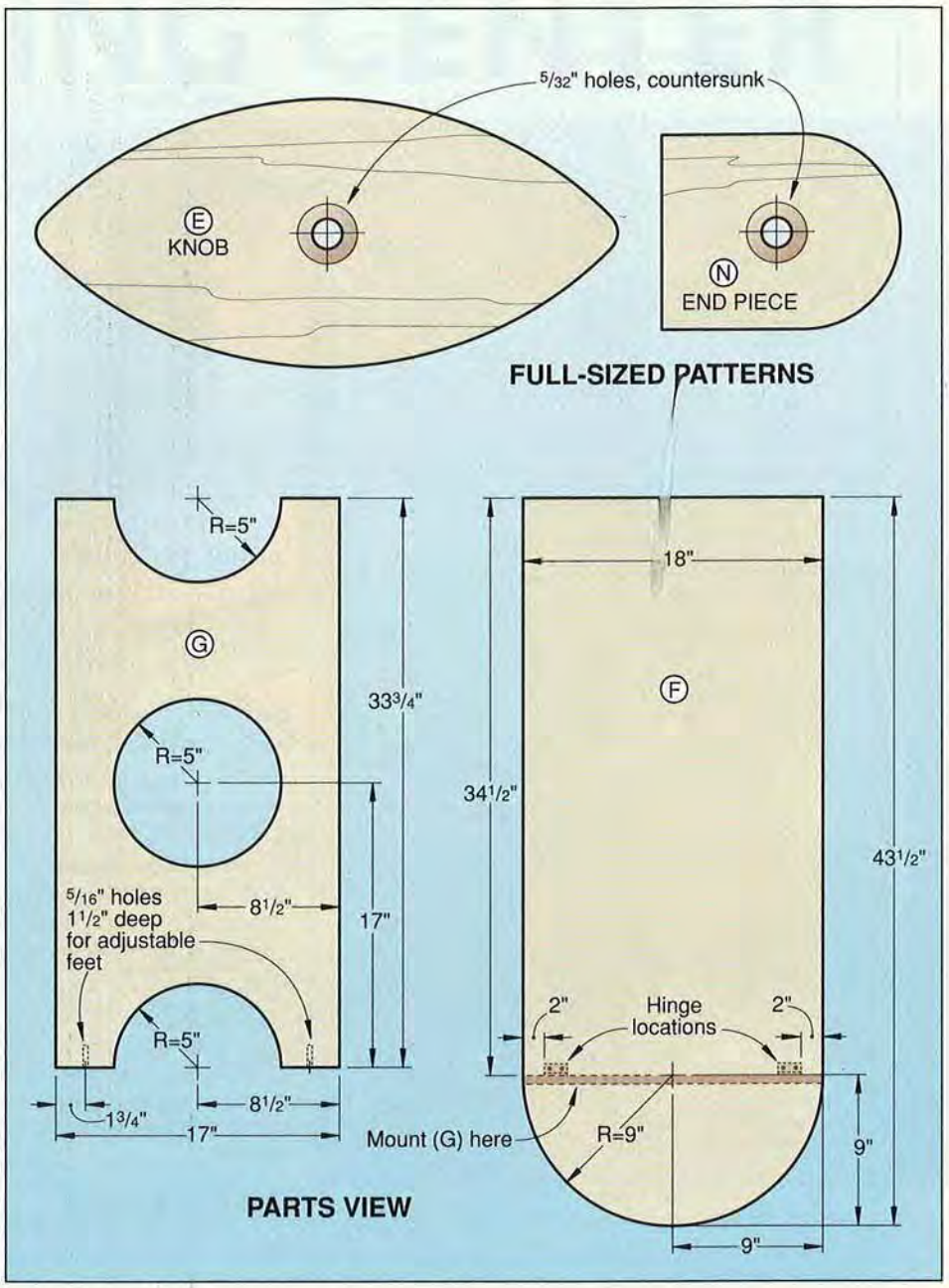
2 Sand ⅛" round-overs along the front edges of all four pieces.

3 Trim a section of curtain rod to 36" long, and secure it to the support arm (M) where shown on the Hanger Assembly drawing.

4 Screw the support/curtain rod to the door. Do not overtighten the screw. The support arm must be free to swing from a vertical to a horizontal position.

5 Now, attach the stopblock (L) to the door. The stopblock should be positioned so that when the support arm is horizontal, the end of the support arm can slide under the stopblock and be held up to the inside face of the door where shown on the Exploded View drawing.

6 Build four finish chairs (O) as shown on the Finish Chair drawing. As shown in the opening photograph, the chairs hold projects above the turntable for ease in applying finishes. Drill mounting holes in the right or left-hand side piece (A), and drive four screws on which to hang the chairs.



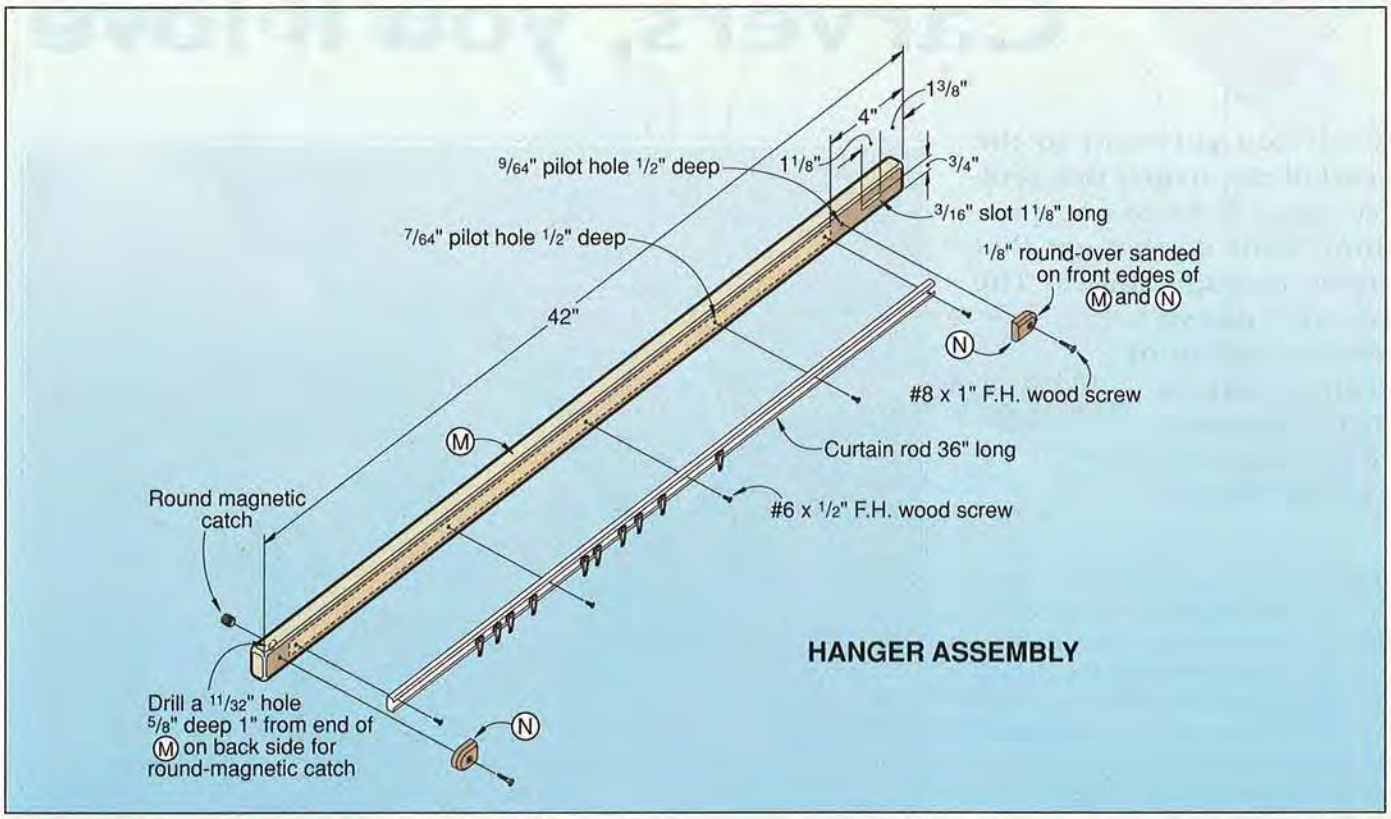
Finish it like a pro, and assemble the pieces

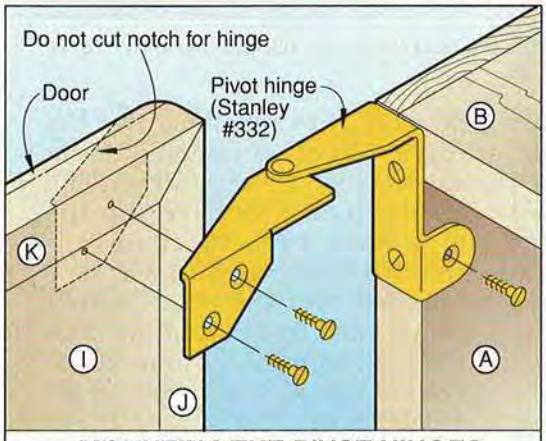
1 Remove all the hardware from the cabinet, table assembly, and door. Finish-sand the project.

2 Mask the surrounding areas, and apply a clear finish to the door edging, table assembly, and support arm. Later, mask the areas that received a clear finish, and paint the cabinet and door.

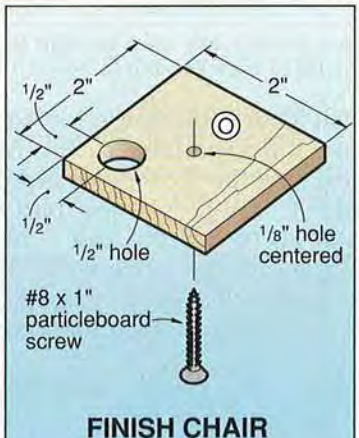
3 Insert a pair of magnetic catches into the holes in the right-hand cabinet side (A). Drill and fit a catch into the hole in the back side of the support arm.

4 Secure the curtain rod to the support arm. For hanging projects later, add paper clips to the rod. Secure the stopblocks (N) to the end of the rods to keep the curtain hooks from sliding out.





MOUNTING THE PIVOT HINGES



FINISH CHAIR

5 Mark its mating location and add the strike plate to the inside face of the door. This keeps the support arm from swinging back and forth every time the cabinet door is opened and closed.

6 Fasten the curtain rod assembly to the door where shown on the Exploded View drawing.

7 Drill the pilot holes and use a pair of 1½×2½" hinges to mount the table support (G) to the bottom of the table (F) where shown on the Exploded View drawing.

8 Trim a 17½"-long section of 1½" continuous (piano) hinge. Drill the pilot holes and fasten the hinge to the back bottom edge of the table.

9 To mount the cabinet to the wall, locate the stud(s), and with the aid of a helper, position the cabinet on the wall 33" from the floor. (We cut a 2×4 to length, and used it as a temporary leg to hold the cabinet at a certain height against the wall. Level the cabinet, and drill and countersink mounting holes through the cabinet back and into the wall stud(s). Screw the cabinet to the wall.

10 Use the pivot hinges to hang reattach the door to the cabinet.

11 With the table support at a right angle to the table and the adjustable feet of the table support on the shop floor, screw the continuous hinge to the bottom cabinet frame member (B). If the table (F) doesn't sit level, adjust the feet first; if this doesn't provide enough adjustment, raise or lower the cabinet as needed.

12 Raise the table assembly (F, G, H) into the cabinet. Now, drill a pilot hole and attach the spacer and knob (D, E) in a position so when rotated, the knob will hold the assembly in place.

Produced by Marlen Kemmet Project Design: Jim Downing Photographs: John Hetherington Illustrations: Kim Downing

Cupid's MYSTERY
Carvers, you'll love

When you get right to the heart of the matter, this project comes down to one question: "How do you get that arrow through there?" The answer doesn't involve cutting or gluing, nor is there complicated carving involved. Curious? Read on.

That arrow really does go right through the heart, it isn't trick photography. There is a bit of trick carving involved, though.

***Start with** a ¾×2½×2¾" block for the heart and a ⅜×¾×7¼" piece of another species for the arrow. This proves you didn't carve the puzzler from a single block. (We carved a cedar heart and a basswood arrow.) Select quartersawn stock for the arrow; that is, stock with the end grain running straight across, as shown in the illustration* opposite page.

If you have trouble finding quartersawn ⅜"-thick stock for the arrow, make your own, as we did. Start with a piece of basswood (or other) that has the end grain running almost straight across, like that shown in the Cutting the Arrow Stock drawing.

Select stock sufficiently thick and wide that you can draw one or two ⅜×¾" rectangles on the end, long sides perpendicular to the grain. Stock that's about 1" thick should work, depending on the angle of the grain. For safety and convenience, start with a workpiece at least 12" long.

Starting at one corner, draw a line across the end of the stock, parallel to the grain (line 1, shown in red on the drawing). Draw line 2 perpendicular to line 1, ¾" long. Then, draw lines 3 and 4 where shown. If there's room on the end, lay out another rectangle.

Tilt your bandsaw table so that line 1 lies parallel to the blade. Bevel-rip the workpiece at lines 1 and 3. Then, set the bandsaw table to 0° tilt (90° to the blade), and resaw the stock to ⅜" thick, removing the wedge-shaped sides. Set the arrow stock aside for now.

Come on, have a heart

Trace the Full-Sized Heart Front View pattern onto the carving stock for the heart. Bandsaw the blank. Mark the center for the 7/16" hole where shown on the right edge of the blank.

Chuck a 7/16" bit into your drill press. Then, align the diagonal centerline on the pattern with the drill bit, holding the blank at that angle with a handscrew clamp. Center the bit on the edge of the blank where shown, and drill.

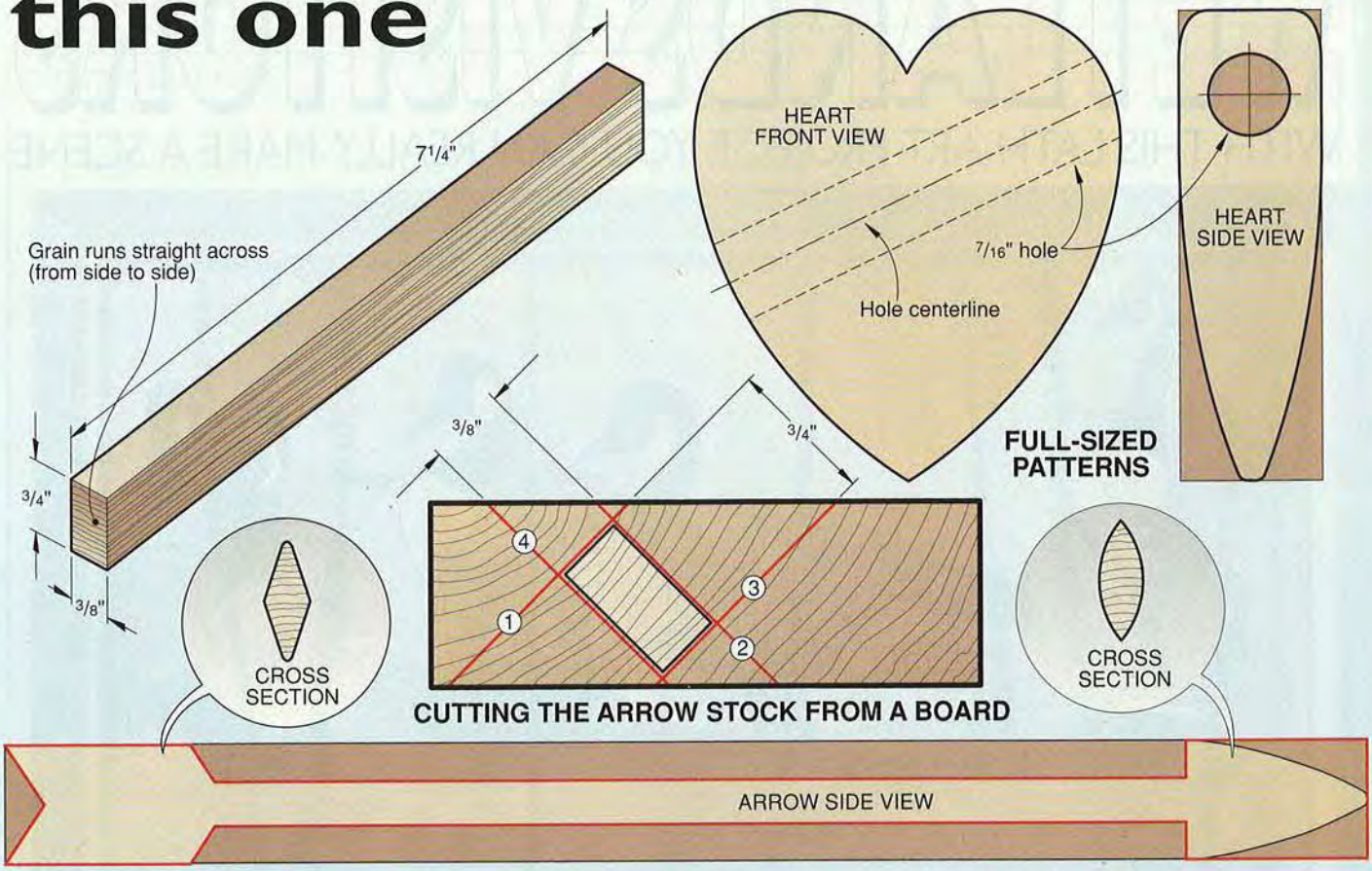
Now, carve the heart. The carving is minimal—it amounts to little more than rounding over the edges. You can accomplish this in any number of ways, depending on the tools you have and the look you want to achieve—smooth or rough-hewn. We rounded over the edges with a bench knife, and curved the front and back with gouges to make the heart ⅜" thick at the point. Apply a clear finish.

The secret of the arrow

It's time to put the arrow through the hole. Figured it out yet? Here's how we did it, using a technique passed on to us by whittler Roald Tweet of Rock Island, Illinois.

Trace the Full-Sized Arrow pattern onto the ⅜" stock. Be sure to place the arrowhead at the end that has grain running straight across. (We found on some of our stock that the grain didn't go straight across at both ends.)

VALENTINE this one



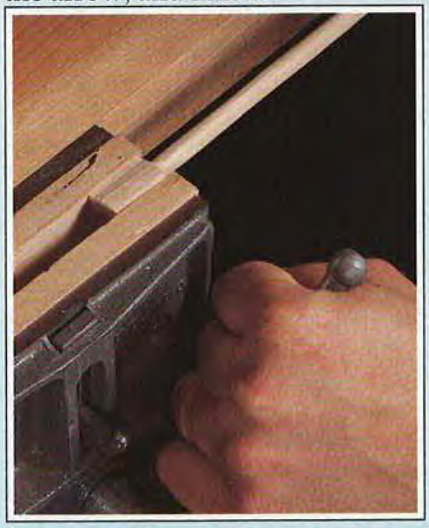
Scrollsaw the blank, cutting on the *red* pattern line. Whittle the arrow shaft to about ¼" diameter. Don't carve the ends just yet, though. Instead, place the rectangular end—the one that will be the arrowhead—in your vise, patterned face up.

Now, close the vise, crushing the wood as shown *right*. Squeeze the end of the arrow until it's narrow enough to slip through the hole in the heart. Whittle the corners off the compressed end to make it fit, as shown *far right*.

The wood won't always cooperate. It may not squeeze down enough, or it might even crack. You'll just have to start over with a new blank if things go awry.

Once you've placed the arrow through the hole, soak the crushed end in a glass of water. Soon, it will start to swell back to its original size. Depending on the wood, the end should be back to original size within an hour or so.

Let it dry. Then, carve the ends of the arrow, and finish.



Compress the arrowhead slowly and steadily, reducing the width to nearly the diameter of the arrow shaft.

Whittle away the corners of the compressed end until it will just fit through the hole in the heart.

Illustrations: Kim Downing
Photographs: John Hetherington

WETLANDS VISITORS

WITH THIS LATH-ART PROJECT, YOU CAN REALLY MAKE A SCENE

For quite a while now, readers have been asking us to do a lath-art design in the magazine. Until recently, though, we hadn't been able to turn up just the right one. Then, as luck would have it, we discovered the work by Tom Brahill from Toronto, Canada. Here's one of his many crowd-pleasing scenes that you'll want to hang in your home.

Start with the thin strips

1 To cut the thin strips, build the pushblock shown on *page 74*.

2 From ¾"-thick pine stock, use the pushblock to rip 27 strips ⅛"-thick by 16½" long. (We used a standard rip blade. The slightly rough surface left by the blade on the strips makes a desirable texture when finishing the project.)

3 Position 22 of the pieces good side down on a flat surface, holding the pieces tightly together to prevent gaps between the strips.

4 Cut a piece of heavy brown paper such as Kraft or brown wrapping paper to 17" square.

5 Using a 3" paint roller, foam brush, or playing card, spread a thin, even coat of yellow woodworker's glue on the exposed face of the resawn strips. Place the paper against the glued surface, being careful to keep the strips of wood edge-to-edge. (We used a framing square to keep the ends of the pieces flush.) Using a flat piece of wood, level the paper on the wood to remove any air bubbles or uneveness.

Later, after the glue has dried, use a hobby knife to trim the paper even with the edges of the wood.

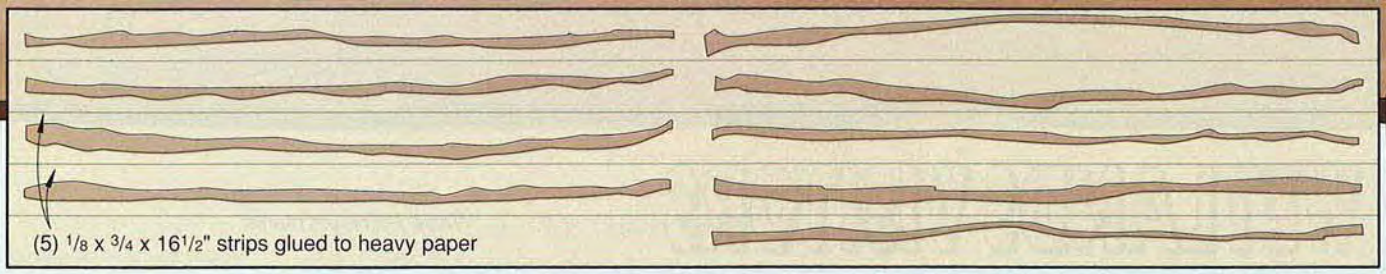
Transfer the patterns and cut the pieces to shape

1 Make four photocopies of the full-sized scene pattern.

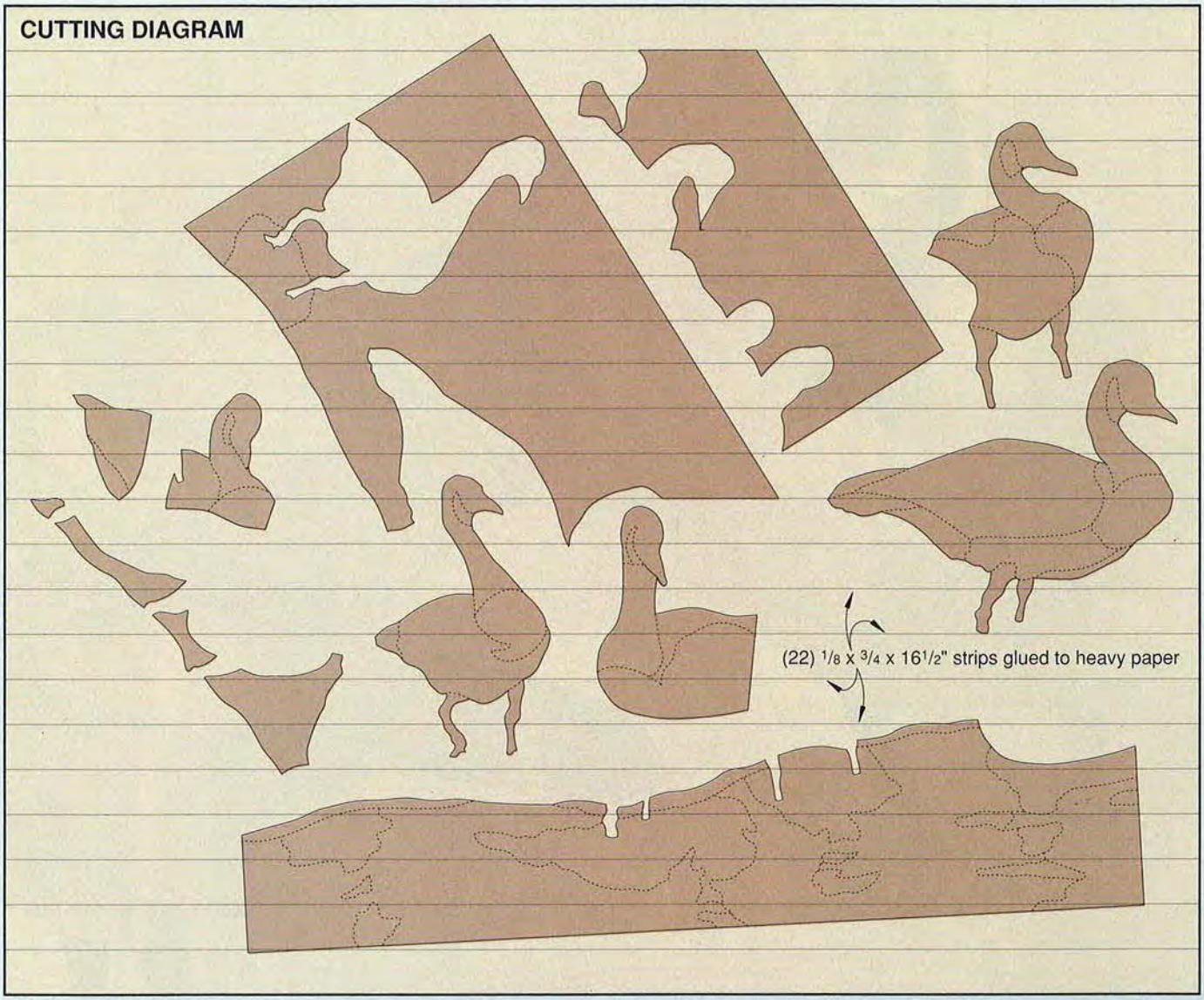
2 Using a hobby or an X-acto knife, cut along the solid lines of the first photocopy to cut the paper pattern sections to shape.

3 Using spray adhesive, adhere the sections to the pine (opposite the paper side) in the configuration shown on the Cutting Diagram on the *opposite page.*

Print this article



CUTTING DIAGRAM



4 Using your scrollsaw and a #8 (8 TPI) blade, cut along the *solid* lines of each pattern section as shown in photo A.

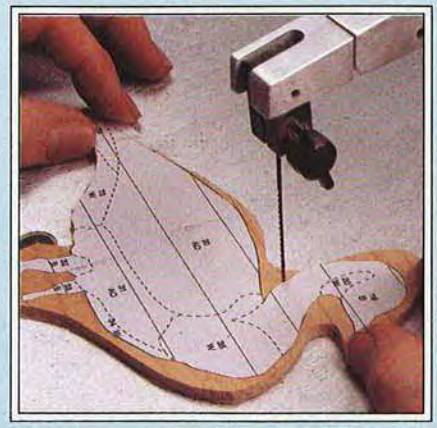
5 Tape the second full-sized photocopied pattern to your workbench as shown in Step 1 of Assembling the Pieces drawing.

6 Scrollsaw along the *dashed* lines to cut the individual pieces from each section. Number the back side (opposite the photocopied pattern) to match those on your full-sized pattern. Place the individual pieces on the full-sized pattern taped to your workbench.

7 Using the third full-sized pattern, transfer the outlines of the nine willows to the five remaining ⅛×¾×16½" pieces of pine. Cut the willows to shape.

Paint the pieces and assemble the picture

1 Using lacquer thinner to disolve the adhesive, remove the paper patterns from the fronts of the scrollsawed pieces.



Continued

WETLANDS VISITORS

Join pattern halves here
Willow alignment marks
PAINT KEY
D Driftwood
DW Desert White
B Black
HG Hippo Gray
AO Antique Oak
DDW Driftwood and Desert White mixture
1 DDW
18 DW
17 B
19 B
20 DW
9 DDW
36 AO
41 B
13 DW
12 B
14 B
15 DW
42 AO
44 AO
83 DW
38 DW
16 B
45 AO
35 DW
37 AO
11 DDW
43 DW
46 DW
47 AO
39 B
10 DDW
40 B
71 DW
8 DDW
34 W
76 DW
58 HG
52 HG
53 HG
54 HG
56 D
55 HG
50 D
59 HG
57 HG
60 HG
63 HG
Willow alignment marks

Continued

WETLANDS VISITORS

2 Using the opening photo and paint key as a guide, paint the front side of each pattern piece, and immediately wipe off the excess paint for a washed look. You want the grain to show through so don't apply the paint too heavily. Place the painted pieces on top of the reference photocopy taped to your workbench. See the Buying Guide for our source of paints.

3 Paint the front face and edges of the willow pieces the same color as the goose body parts.

4 Cut a piece of ¼" plywood to 10×18". Spray the back side of the fourth photocopy with spray adhesive. Center and adhere the pattern to the ¼" plywood where shown in Step 2 of the Assembling the Pieces drawing.

5 Glue the painted pieces to the pattern adhered to the ¼" plywood as shown in Step 3 of the Assembling the Pieces drawing. (To keep from having to clamp each piece in place, we used instant glue.)

6 Using the alignment marks on the full-sized pattern as guides, glue the willow pieces in place on top of the goose and water pieces.

7 Trim the lath-art scene to 8×15" finished size, making sure the edges are square.

Finish by adding the frame

1 Cut one piece of pine stock to ¼×⅝×52" for the inner frame parts and one piece to ½×⅞×56" for the outer frame parts.

2 Using the Exploded View drawing for reference, miter-cut the the inner frames pieces to length to fit around the scene. Paint the pieces and glue them to the edges of the scene.

3 Miter-cut the outer frame pieces to length and paint them. Then, glue and nail them in place.

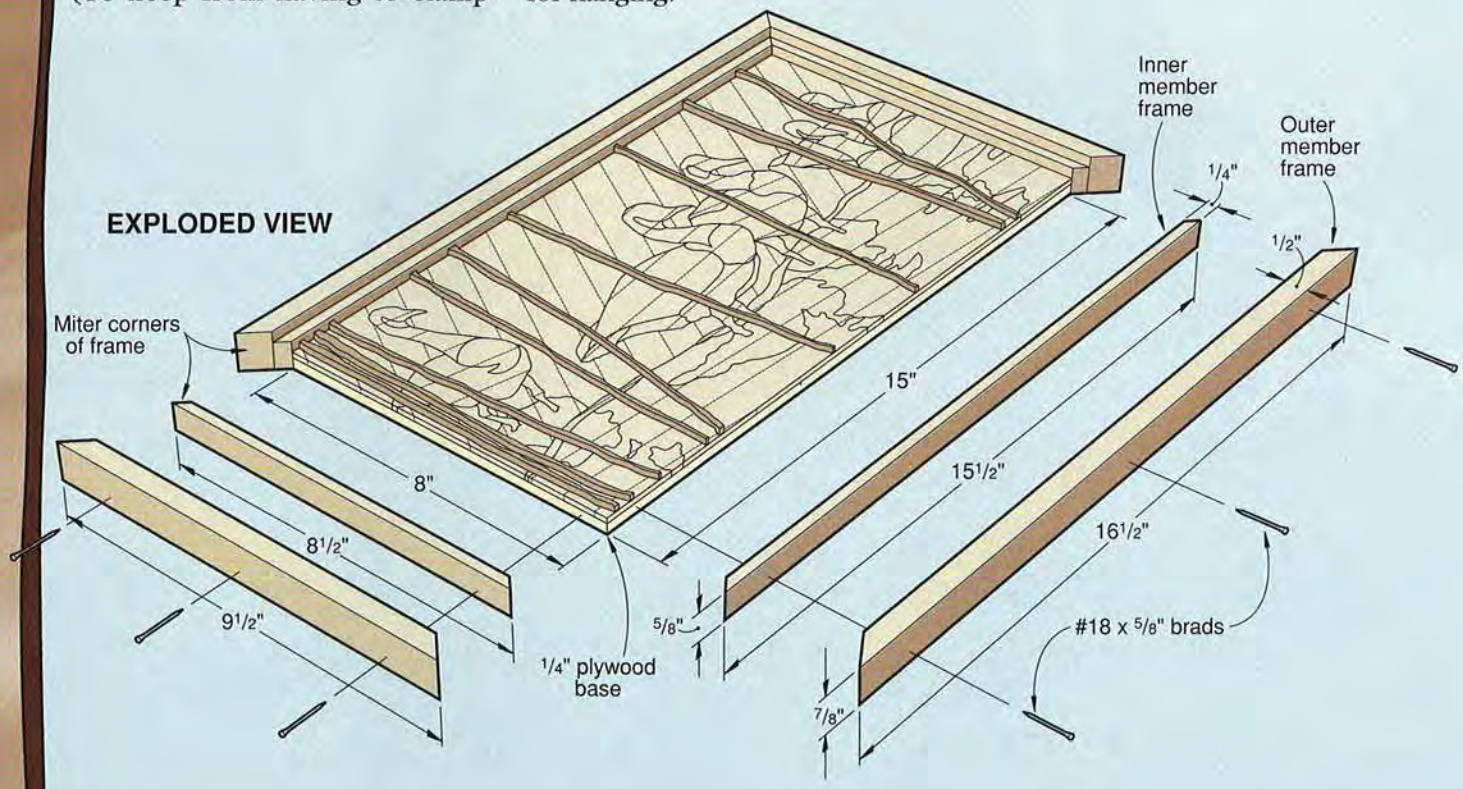
4 Center and attach a sawtooth hanger to the back of the picture for hanging.

Buying Guide

Acrylic paint kit. One 2-oz. bottle each of Delta driftwood, desert white, black, hippo gray, and antique oak. Four full-sized photocopies of the goose scene pattern included. Kit no. WMGEESE, $13.95 ppd. Add $3.95 for a ½"-wide wash brush and $4.95 for an 8-ounce can of spray adhesive. Cherry Tree Toys, P.O. Box 369, Belmont, OH 43718. Or call 800/848-4363 to order.

Additional patterns. Catalog of lath-art patterns and kits, $2 ppd. Tom Bramhill Lath Art, 660 Eglington Ave. East, P.O. Box 50101, Toronto, Ontario, M3G 4G1, Canada.

Produced by Marlen Kemmet
Project Design: Tom Brahill
Photographs: Wm. Hopkins
Illustrations: Kim Downing; Jamie Downing

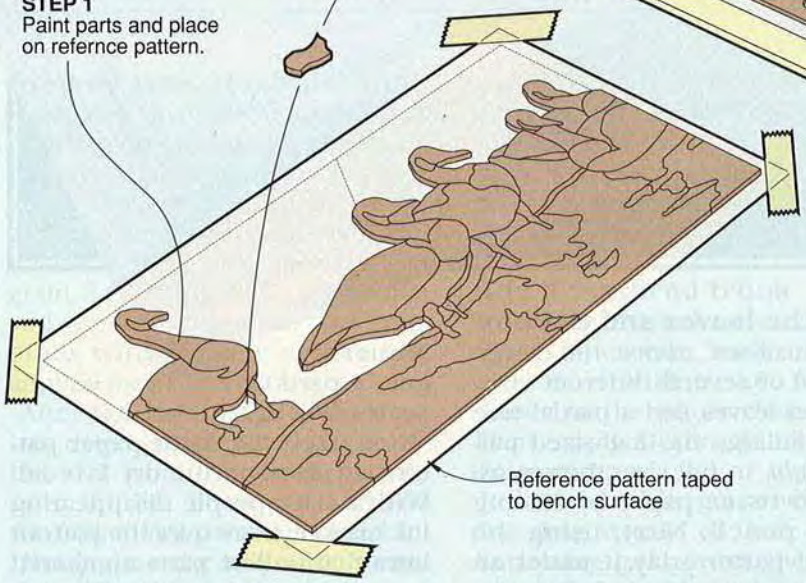


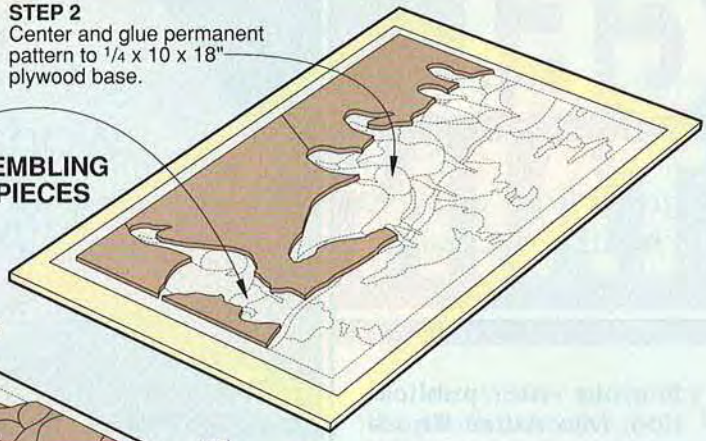
ASSEMBLING THE PIECES

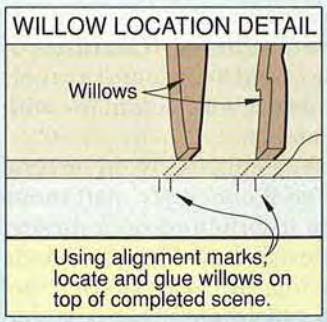
STEP 1
Paint parts and place on refernce pattern.

STEP 2
Center and glue permanent pattern to 1/4 x 10 x 18" plywood base.

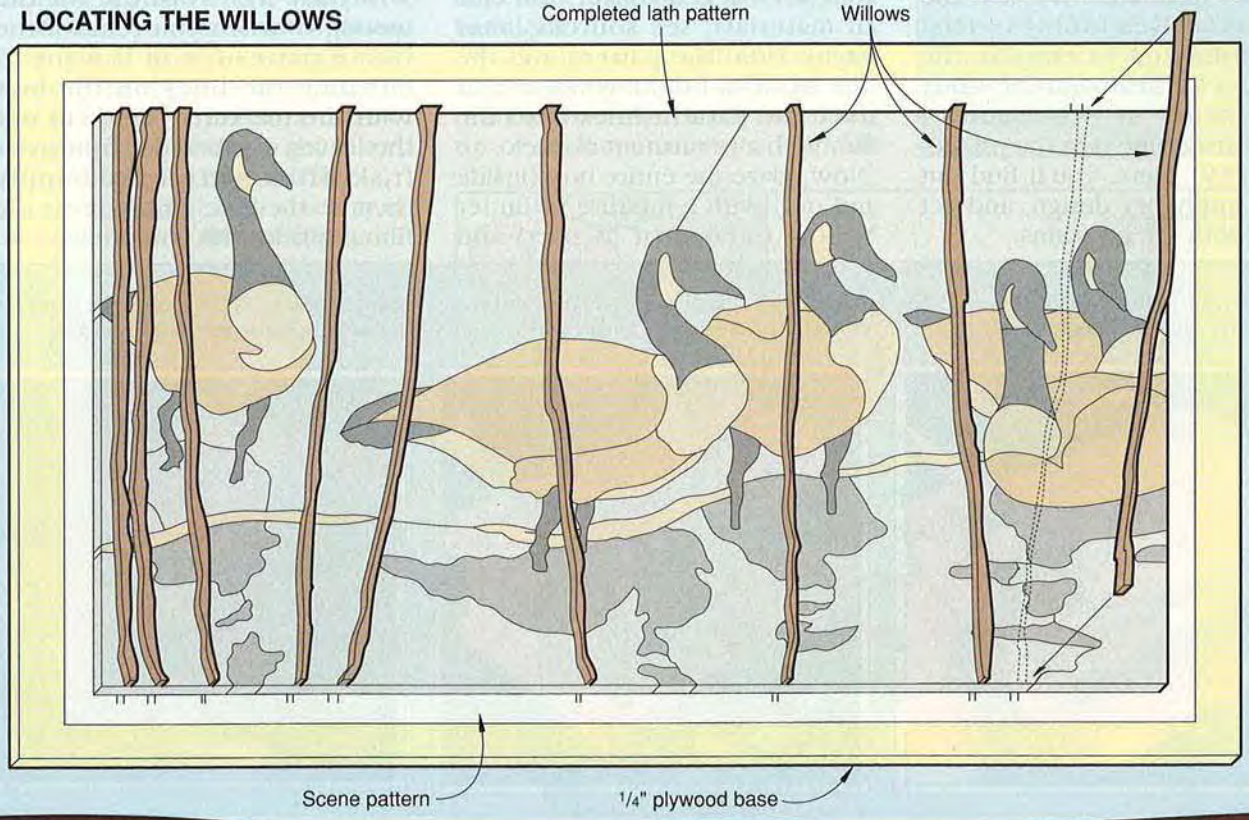
STEP 3
Remove parts in order from reference pattern and glue on to permanent pattern on plywood base.







LOCATING THE WILLOWS



GEL STAIN

When our sister publication, *Decorative Woodcrafts™*, last year invited Peggy Caldwell to demonstrate the technique of using Delta's then-new Home Decor Gel Stains, we watched through the door. Peggy, who lives in Huffman, Texas, works as creative director for Delta Technical Coatings of Whittier, California, and travels the country giving seminars with their products.

That day, Peggy showed several *Decorative Woodcrafts'* staff members how to brighten up a project with a design and finishing technique using the water-based gel stains. We liked what we saw, and later asked Des Moines artist Peggy Johnston to employ the stains in a lid treatment for a box that appears in this issue of *WOOD®* magazine (see the project on *page 59*). Here, you'll find out how to apply her design, and get familiar with the gel stains.

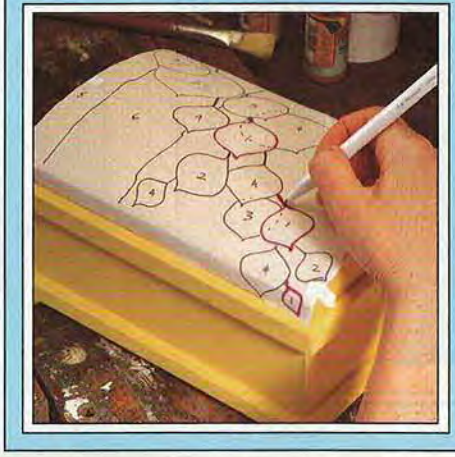
Prep the leaves and the box

As you can see, *above*, the design consists of several different sizes of aspen leaves and a partial tree trunk. Enlarge the half-sized pattern, *right,* to full size, then transfer it to tissue paper by tracing with a pencil. Next, using the original pattern, lay it under an 8½×11" piece of clear plastic, adhesive-backed frisket film (for all materials, see sources, *next page*). Hold the pattern and the film up to a bright window and trace the pattern lines onto the film with a permanent marker.

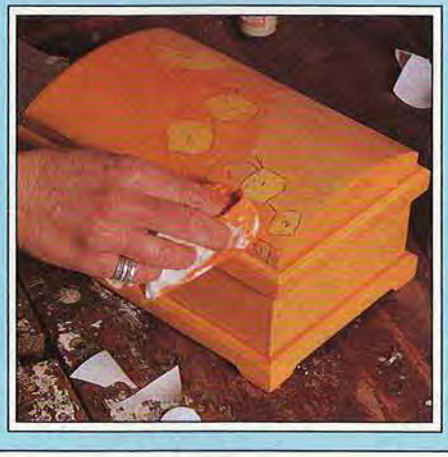
Now, glaze the entire box (inside and out) with a mixture of Butter Yellow Ceramcoat (1 part) and Neutral gel (2 parts). Let the box dry.

Next, tape the tissue-paper pattern in place on the dry box lid. With a dark purple disappearing ink marker, trace over the pattern lines that outline parts numbered 1, as shown *below left*. (The ink will only lightly show on the wood, so when you remove the tissue pattern, you'll want to enhance the lines on the box with the marker.) Then, cut out the leaves numbered 1 from your frisket-film pattern, and apply them to the box. Firmly press the film in place with your finger.

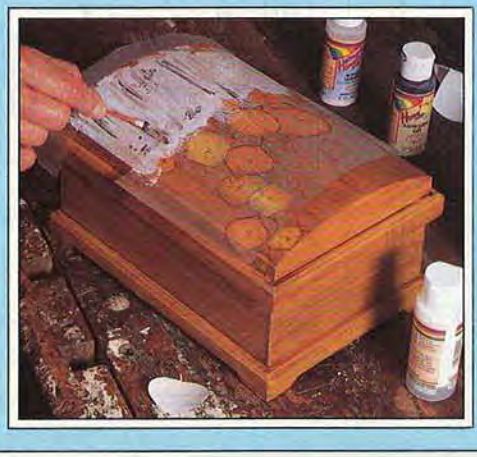
Transfer the pattern to the box lid by tracing over it with disappearing ink



Wipe on gel stain with a clean, lint-free cloth in the direction of the grain.



Add details to the masked-off trunk area by wiping stain across with a Q-tip.



Design: Peggy Johnston Photographs: John Hetherington

Print this article

It's colorful, easy to use, and it lets the grain show

IN SEARCH OF THE PERFECT FINISH

Looking for an unusual finish for a special project? Delta's pickling gels let you build up color for flashy designs, and they clean up with water.

Step by step, start pickling

Squeeze a small amount of Delta's Goldenrod pickling gel onto a palette or foam plate. With a clean, lint-free cloth, pick up the gel and gently wipe it over the entire box, working with the grain. Let the first coat dry, then add another. This glaze coat combines with the one you've just applied for a different hue.

After the last coat of Goldenrod has dried, trace the parts numbered 2 from the tissue pattern onto the lid. Then, cut and add the frisket-film parts numbered 2.

Now, glaze the box with Sunset orange gel. Let the box dry.

Following the trace-and-paste procedure you used with pattern parts 1 and 2, add the ones numbered 3 to the box and press in place. Next, wipe on a coat of Pumpkin and Neutral gel mixed half and half. Let this coat dry.

Trace the number 4 parts from the pattern onto the lid. Then, cut and apply the like-numbered pieces from the frisket-film pattern onto the wood. Wipe the box with a half-and-half mixture of Dark Brown Antiquing gel and Neutral gel. Let dry.

Add a textured trunk

To create the bark-covered trunk of the aspen tree, mask off both sides of it with frisket film, as shown in the photo, *below left*. Then, apply Desert White gel to the trunk area.

Before the white gets completely dry, drag streaks of Dark Brown Antiquing gel across the trunk with a Q-tip. Add dots of color as necessary to achieve the desired bark look.

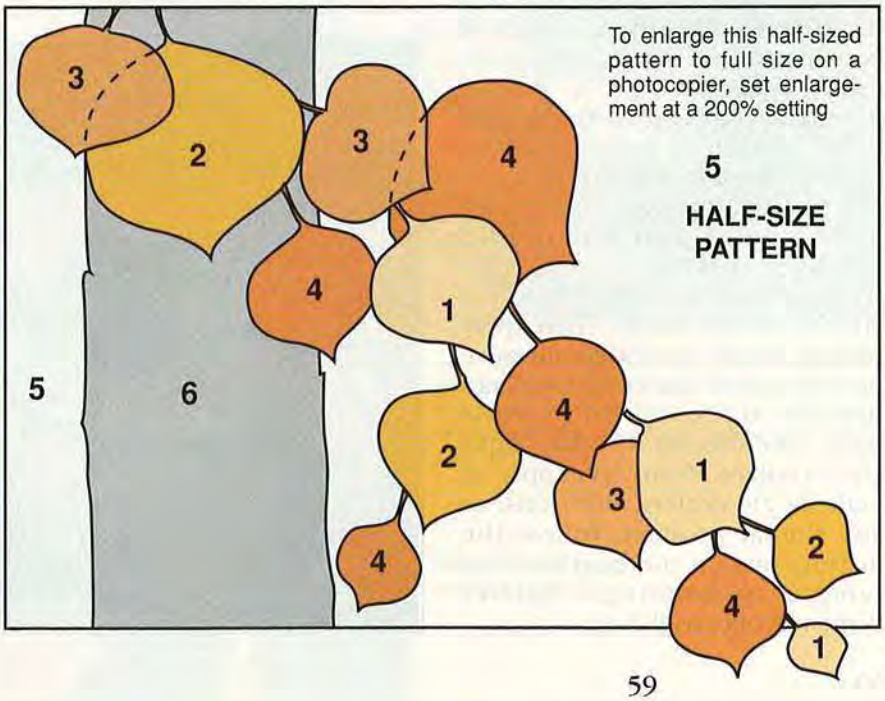
When the gel has dried, remove all film to reveal the different colored leaves. (We used the sharp tip of an X-acto knife to help lift the sticky film, as shown in the last photo *below*.)

To create more contrast between leaves, you can shade areas with the deeper-colored gels. When you're satisfied, let the box thoroughly dry, then coat with Home Decor Satin Acrylic Varnish.

Product Sources

You can buy Delta's Home Decor line and Ceramcoat at craft stores. A 2-ounce bottle sells for $1.99. For a retailer near you, write: Delta Technical Coatings, Inc., 2250 Pellissier Place, Whittier, CA 90601, 800/423-4135. Frisket film is available at art-supply stores. A 10×14" piece sells for $2. Disappearing ink marking pens cost about $2.25 each at craft stores.

When the stain has dried, unveil your work by lifting off the pattern pieces.



What woodworkers need to know about...

TRANSFERRING

"Transfer the pattern to your stock." This simple-sounding instruction, the first step in so many *WOOD*® magazine projects, bears directly on your success in the workshop. For no matter how carefully you saw, drill, and sand, a poor job of patterning almost always leads to an ill-fitting part. Your pattern won't lead you astray, though, if you follow a few simple procedures.

Precise patterns in a flash

The most accurate way to transfer a full-sized pattern onto the wood from a book or magazine would be to tear out the page with the pattern and glue it right to your stock. But most of us like to keep our woodworking books and magazines intact for reference. So, do the next best thing: Photocopy the pattern at 100 percent, then glue the copy to your stock.

It probably will cost you a dime or less per page to copy your pattern at a copy center, possibly a little more at a supermarket, library, or one of the countless other locations where you find coin-operated, plain-paper copiers these days. Make several copies of your pattern at once; the spares insure against mishaps.

Compare your copy with the published pattern to ensure that the machine hasn't cropped off a crucial portion. Highlight color-coded lines or tinted areas with colored pencils or markers.

Back in your workshop, trim the copy to fit the stock. Then spray repositionable mounting adhesive on the back of the copy to adhere it to the stock, shown *opposite page*. (We use 3M 77 spray adhesive, available from art-supply or craft-supply dealers. With this, or any similar product, follow the instructions on the container for temporary bonding.) Rubber cement works well, too.

After machining the part, peel off the pattern. Clean any traces of adhesive from the wood with lacquer thinner. However, if a piece of the paper sticks to the surface, pick at it or scrape it off, but don't swab it with thinner. Thinner will soak it off all right, but it also will dissolve the toner that makes those crisp black lines, staining the wood as shown *below*.

Transfering by tracing

In some instances, such as woodcarving, a paper pattern glued onto the stock poses a hindrance. And sometimes, it's just a lot easier to draw a simple outline directly onto the wood. In these situations, turn to tracing.

You could trace the pattern directly from the book or magazine page. But holding the stock between the pages as you trace a pattern quickly becomes an unmanageable task. Instead, you'll usually have better luck working from a photocopy. Position the copy on the stock, and fasten it at one side with tape tabs.

Slide a piece of transfer paper under the pattern; use white or yellow for dark woods; blue, red, or graphite for light ones. While common office-supply carbon paper would work for this, we prefer transfer paper for the wax-free lines it leaves. They erase with a standard pencil eraser without staining the wood, and you can paint right over them. (You'll find transfer paper at a local art-supply, craft-supply, or fabric store.)

Trace the pattern with a sharp pencil, pressing hard enough to mark a line on the wood but not

Oops! Lacquer thinner dissolves spray adhesive, but it also smears copier toner around and stains the wood. If a piece of the pattern sticks to the wood, scrape it off. Then use lacquer thinner to clean the adhesive from the wood.

Print this article

hard enough to indent it. (A colored pencil helps you keep track of the lines you've traced.)

For best results, don't try to trace freehand—the woodgrain will grab the pencil point and make it veer off the line. A straightedge, a French curve or a flexible curve, and a compass or circle guide will help you trace accurately, as shown *below right*.

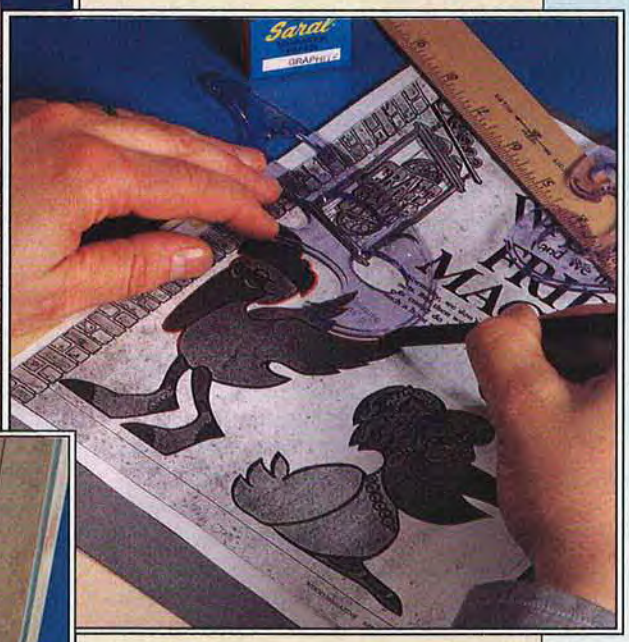
To trace simple outlines straight from the printed page, try a disappearing-ink fabric marker (fabric stores sell these). Lay tissue paper (the gift-wrapping variety) over the printed pattern. Inexpensive tissue seems to be more porous and works better. Trace the pattern line with a pencil.

Then, position the tissue on your stock. Trace over the pencil line with the disappearing-ink marker, which will impart a line through the tissue onto the wood, as shown *below left*.

This method makes thick lines, so it's best where precision doesn't count. The marker's lines fade away within 24 hours.

Left: **Spray an even coat of adhesive on the back of the pattern. Lay the pattern on newspaper so you can spray all the way to the edges.**

Below: **Drafting tools such as this French curve help you trace patterns accurately. Smooth curves and ruler-straight lines will be easier to follow with the scroll-saw.**

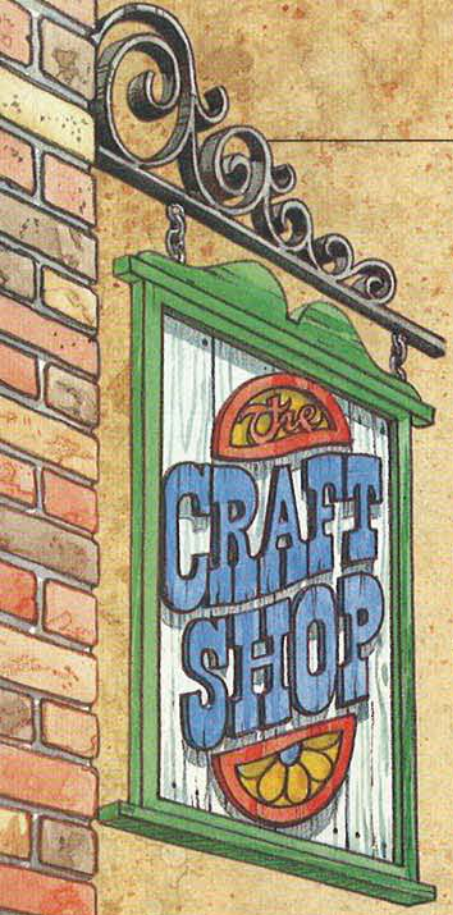


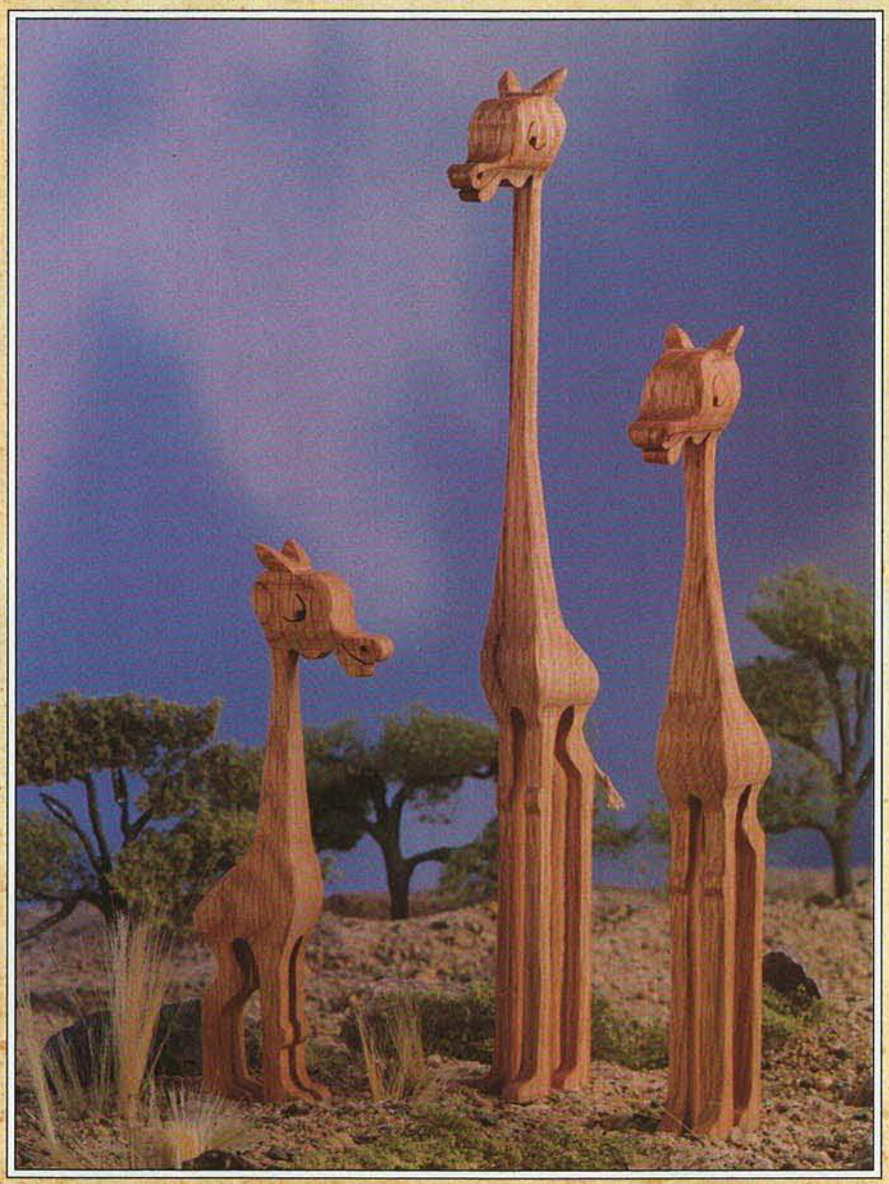
Left: **This disappearing fabric marker works great on light-colored woods. The ink soaks through the tissue to mark the wood beneath. The lines fade away within a day.**

Written by Larry Johnston
Photographs: John Hetherington

ANIMALS WITH ALTITUDE

Cutting two times gives these giraffes personality





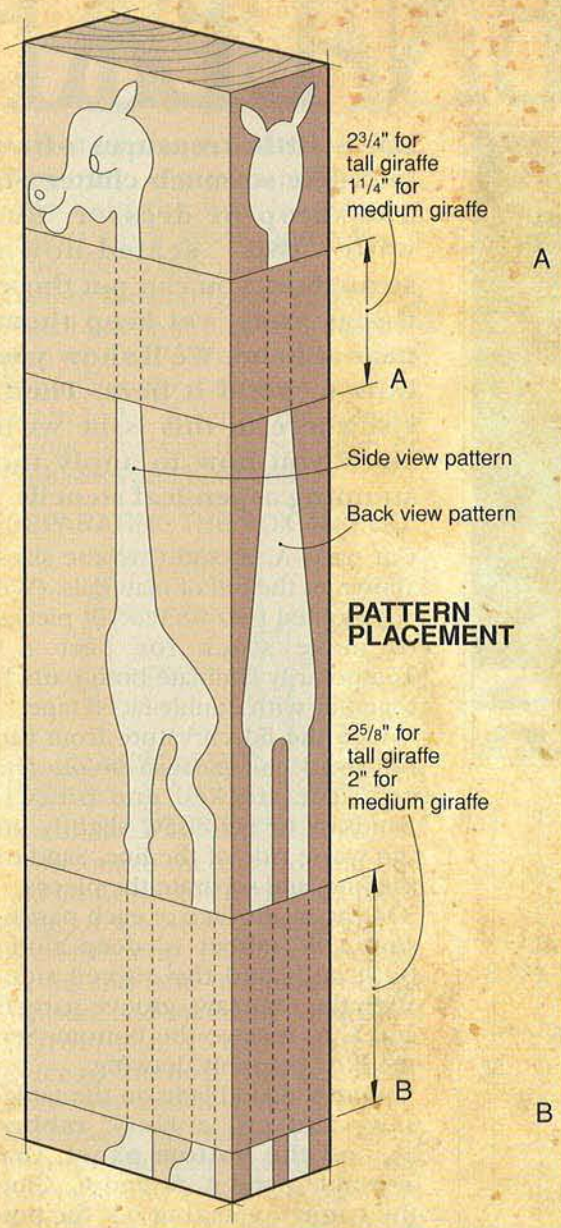
These whimsical giraffes stand head and shoulders above ordinary animal cutouts—and in this case, that's no small distance. They're also great fun to make. Go ahead and give 'em a try.

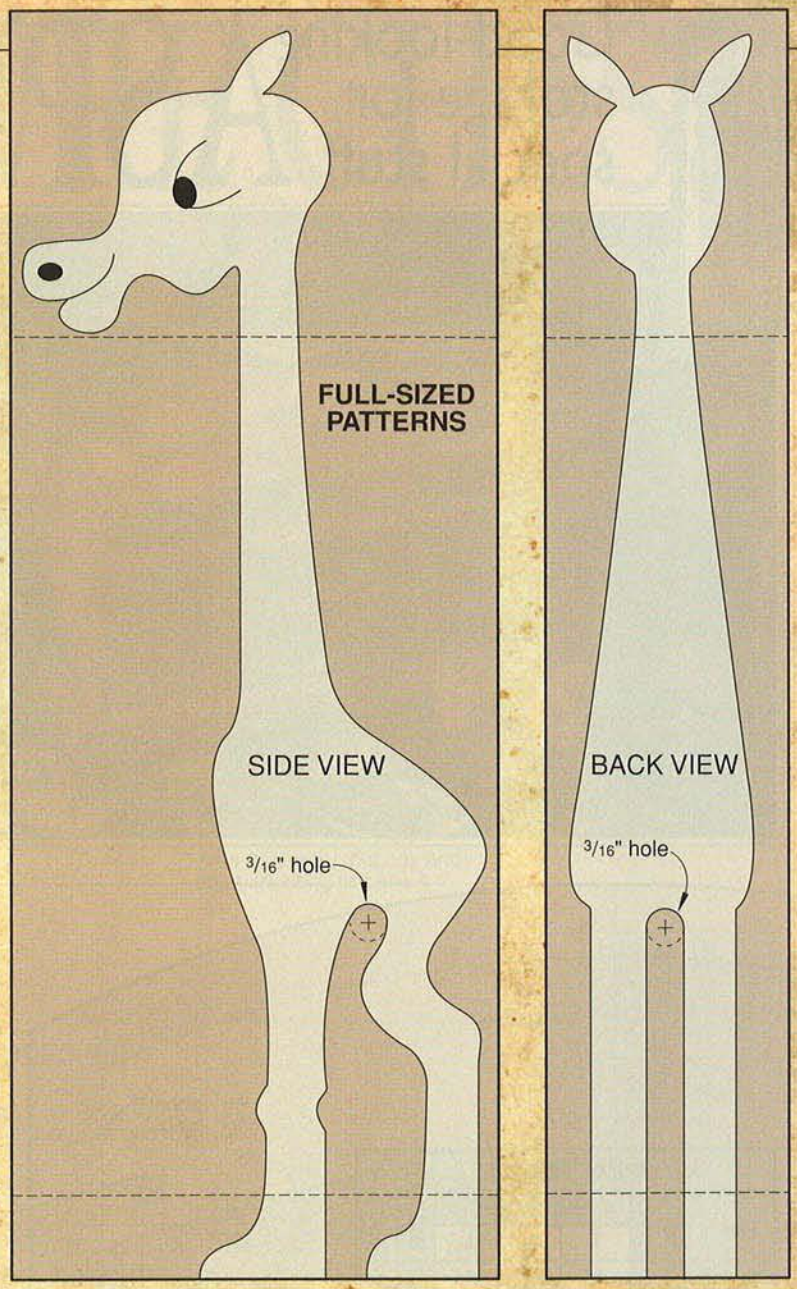
For each set of three giraffes, cut a 6½", 9¼", and 12" length from 1¼×2½" oak, ash, or other hardwood. Then, make three photocopies of the full-sized patterns.

Cut two of the copies apart at lines A and B. Arrange the sections of one of the Side View patterns on the longest piece of stock as shown in the Pattern Placement illustration. Place the feet flush with one end of the stock. At line A, space the pattern pieces 2¾" apart; at line B, 2⅝".

Now, center the Back View pattern on the stock, aligning the sections with the Side View pattern. Affix the pattern parts to the stock with spray adhesive or rubber cement. Fill in the missing neck and leg lines with a pencil or fine-point marker.

Print this article





Repeat for the medium-sized giraffe, spacing the pattern segments 1¼" apart at line A, 2" at line B. For the shortest giraffe, use the uncut pattern.

You can make giraffes of different heights, too. Simply adjust the separation distances at lines A and B to your preference. Try varying the length of the neck and legs in relation to the overall height for humorous effects.

Drill a ⅛" blade start hole for the eye cutout. For the nostrils, wobble the drill slightly to make an elongated ⅛" hole. Drill 3⁄16" holes where shown for easier sawing—those are tight turns, even for a ⅛" bandsaw blade.

Bandsaw the Back View pattern, starting with the waste between the legs. Saw from the bottom of the blank to the drilled hole, back out, and cut along the other line. Then, cut away the section at the top of the head between the ears. Next, make a continuous cut along each pattern line to remove the side pieces intact.

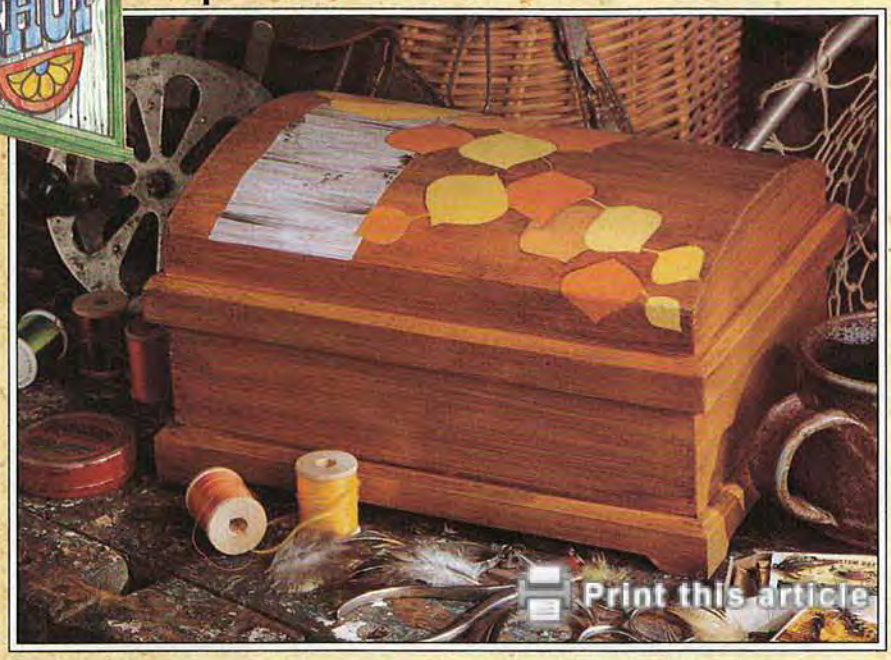
Reassemble the cutout and the two side pieces you just cut off. Bind them with tape.

To saw the Side View pattern, thread a scrollsaw blade (we used a #5 blade, .038×.016" with 12.5 TPI) through the blade start hole, and make the curved eye cut. Next, with the scrollsaw or bandsaw, remove the waste between the legs. Then, cut around the outside pattern line to complete the sawing.

Sand as necessary, and apply a clear finish. To complete each giraffe, drill a hole at the end of the bump on the back of the body and insert a piece of twine about 1" long for a tail.

Project Design: © Max Wood, Glen McCullough
Illustrations: Kim Downing
Photograph: John Hetherington

Good-looking storage for special stuff ASPEN-LEAF



Life's little treasures often look like so much clutter on a desktop or dresser. But with this scaled-down strongbox, you can put those things away, yet keep them near at hand. We'll show you how to build it here. Then, elsewhere in this issue we'll show you how to apply the stunning aspen-leaf stencils.

Cut parts A, B, and C to the sizes shown in the bill of materials. (We edge-joined two ⅜×3¼×10" pieces to make stock for part A.) Temporarily laminate both parts B together with double-faced tape.

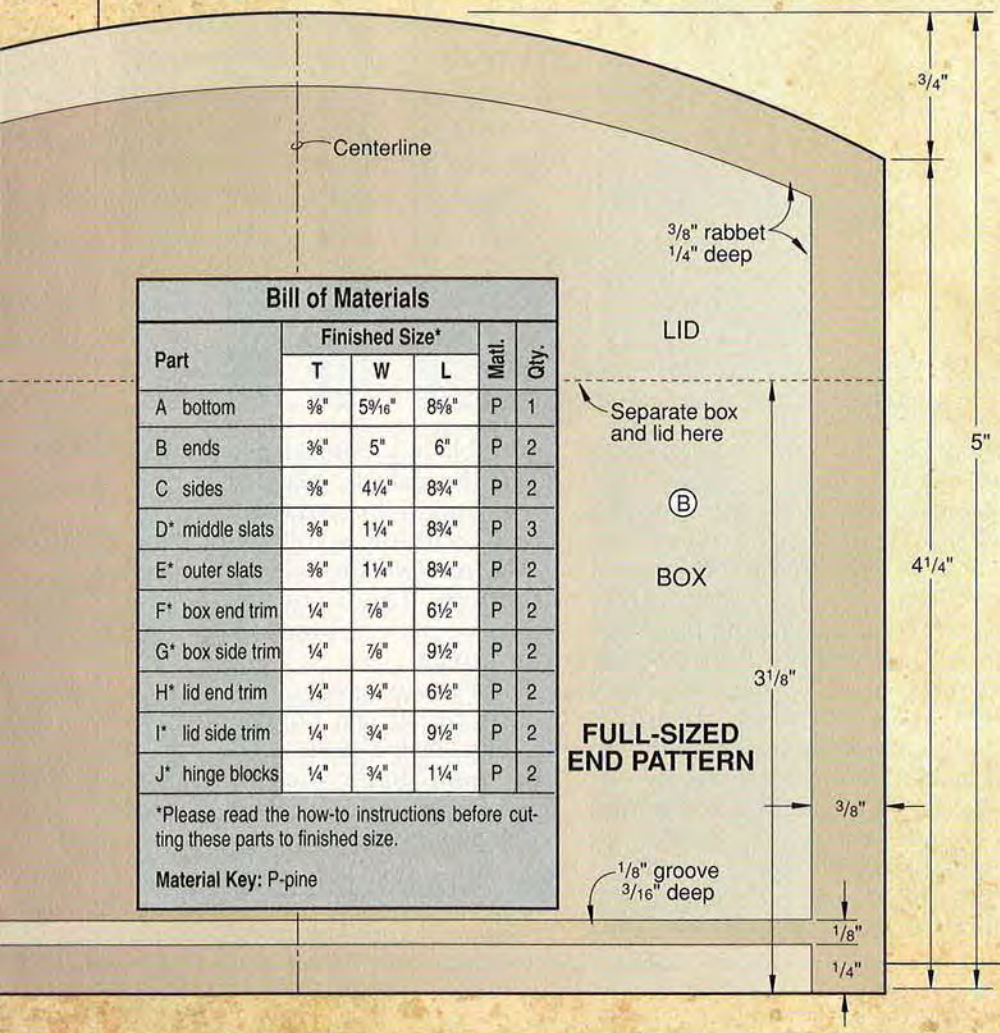
Trace the lid curvature from the full-sized half pattern *below left* onto the stacked end pieces. Bandsaw or scrollsaw slightly on the waste side of the line. Sand to the line, and separate the pieces.

On the inside face of each part B, rout a ⅜" rabbet ¼" deep along both ends and the curved side. With the tablesaw, groove parts B and C to receive the bottom. See the Box Assembly drawing.

Mount a dado blade on the tablesaw, and cut a ¼×¼" rabbet around the bottom panel. Dry assemble parts A, B, and C. Glue the corner joints (but not the bottom), square the box, and clamp.

Tilt your tablesaw blade 5° from vertical, and bevel-rip one edge of a ⅜×1¾×36" piece of pine. Readjust the fence for a 1¼" cutting width, and bevel-rip the other edge to make stock for parts D. Bevel-rip one edge of another piece of stock at 5°, then tilt the blade to 30° to bevel the other edge to make stock for parts E. Measure the top opening before trimming the parts.

Mask inside the box to catch glue squeeze-out. Fit parts D and E, applying glue sparingly. Place waxed paper over the arched top,



Bill of Materials

Part	Finished Size* T	W	L	Matl.	Qty.
A bottom	⅜"	5 9/16"	8⅝"	P	1
B ends	⅜"	5"	6"	P	2
C sides	⅜"	4¼"	8¾"	P	2
D* middle slats	⅜"	1¼"	8¾"	P	3
E* outer slats	⅜"	1¼"	8¾"	P	2
F* box end trim	¼"	⅞"	6½"	P	2
G* box side trim	¼"	⅞"	9½"	P	2
H* lid end trim	¼"	¾"	6½"	P	2
I* lid side trim	¼"	¾"	9½"	P	2
J* hinge blocks	¼"	¾"	1¼"	P	2

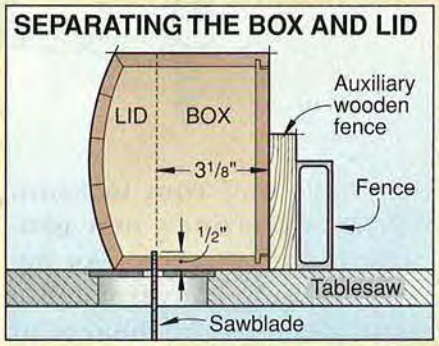
*Please read the how-to instructions before cutting these parts to finished size.

Material Key: P-pine

TREASURE CHEST

and clamp with rubber bands. When dry, contour-sand the top. (We held the box lengthwise against a belt sander and rolled it from side to side.)

Before separating the lid, draw a pencil line from top to bottom on one end to serve as an index mark. Set the tablesaw cutting depth to ½". Refer to the drawing *below*, then saw the box apart on both sides and both ends.

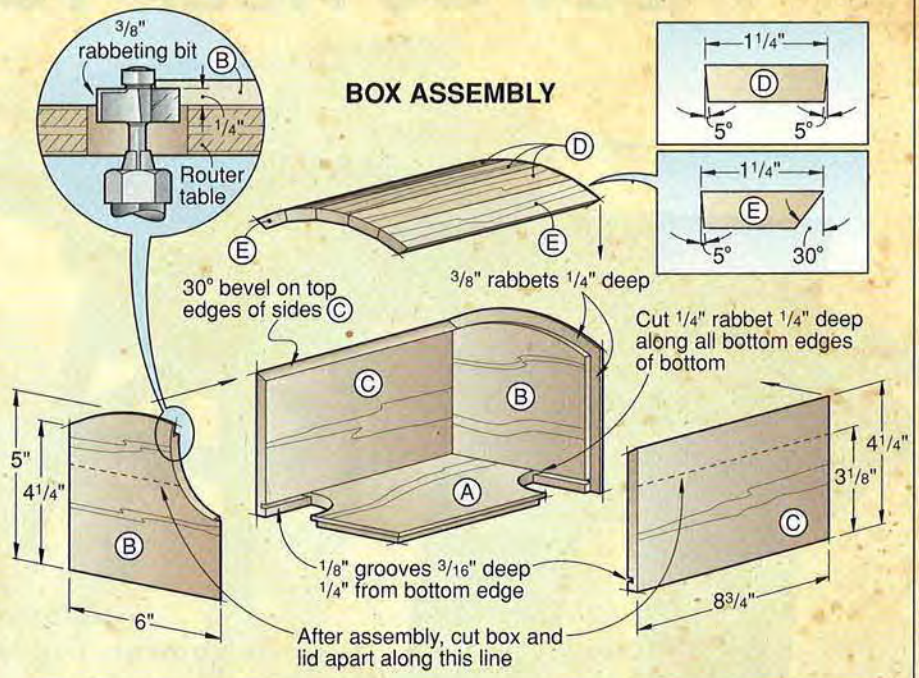


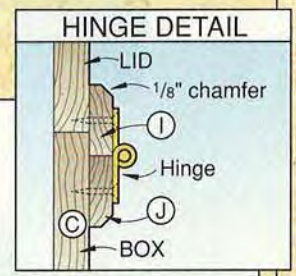
Now, make the trim for the box and lid. Form a ⅛" chamfer on one edge of a ¼×¾×36" strip and a ¼×⅞×36" strip. (We used a chamfer bit and table-mounted router). Measure and miter-cut parts F and G from the ⅞"-wide material. Refer to the Box Trim Leg Detail drawing, and lay out the legs. Scrollsaw or bandsaw them. Measure and miter-cut the lid trim pieces H and I. Glue on the trim where shown in the Exploded View drawing.

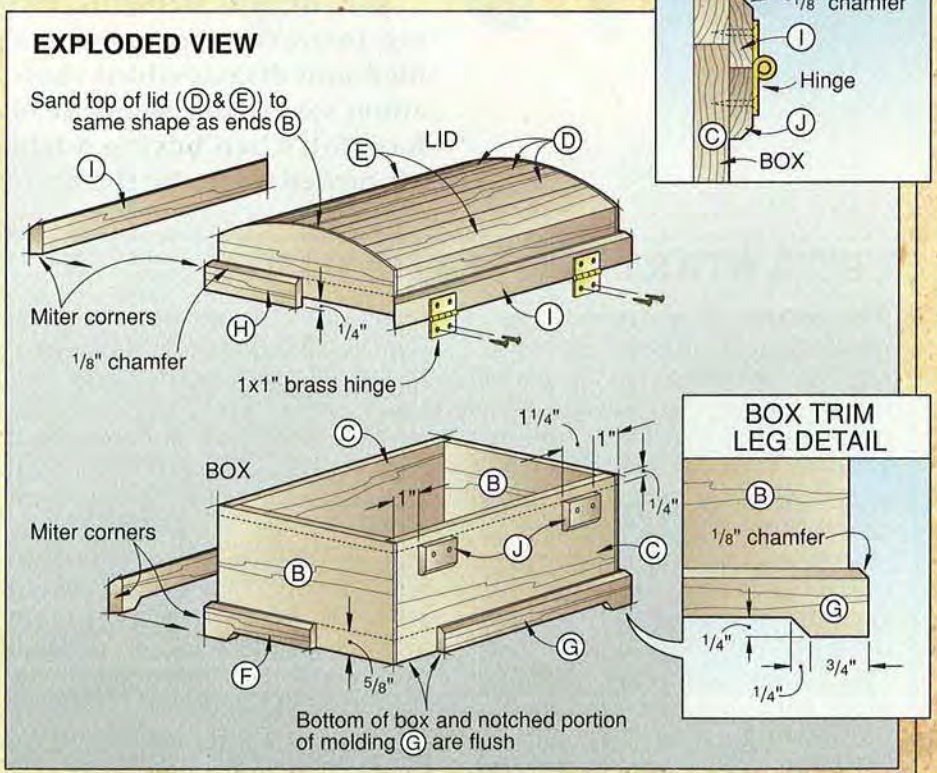
When the glue dries, fit the lid to the box. Mark the box at the bottom of the lid trim. Remove the lid, and lightly sand the area above the mark to allow the top to open and close easily.

Cut the hinge blocks (J) to size, and glue on where shown. Sand the box. Attach 1×1" brass hinges where shown, then sand the inside of the front lid trim as necessary for smooth opening.

We finished our box with a stenciled aspen-leaf design using acrylic gel stains. To see how, turn to *page 58.*



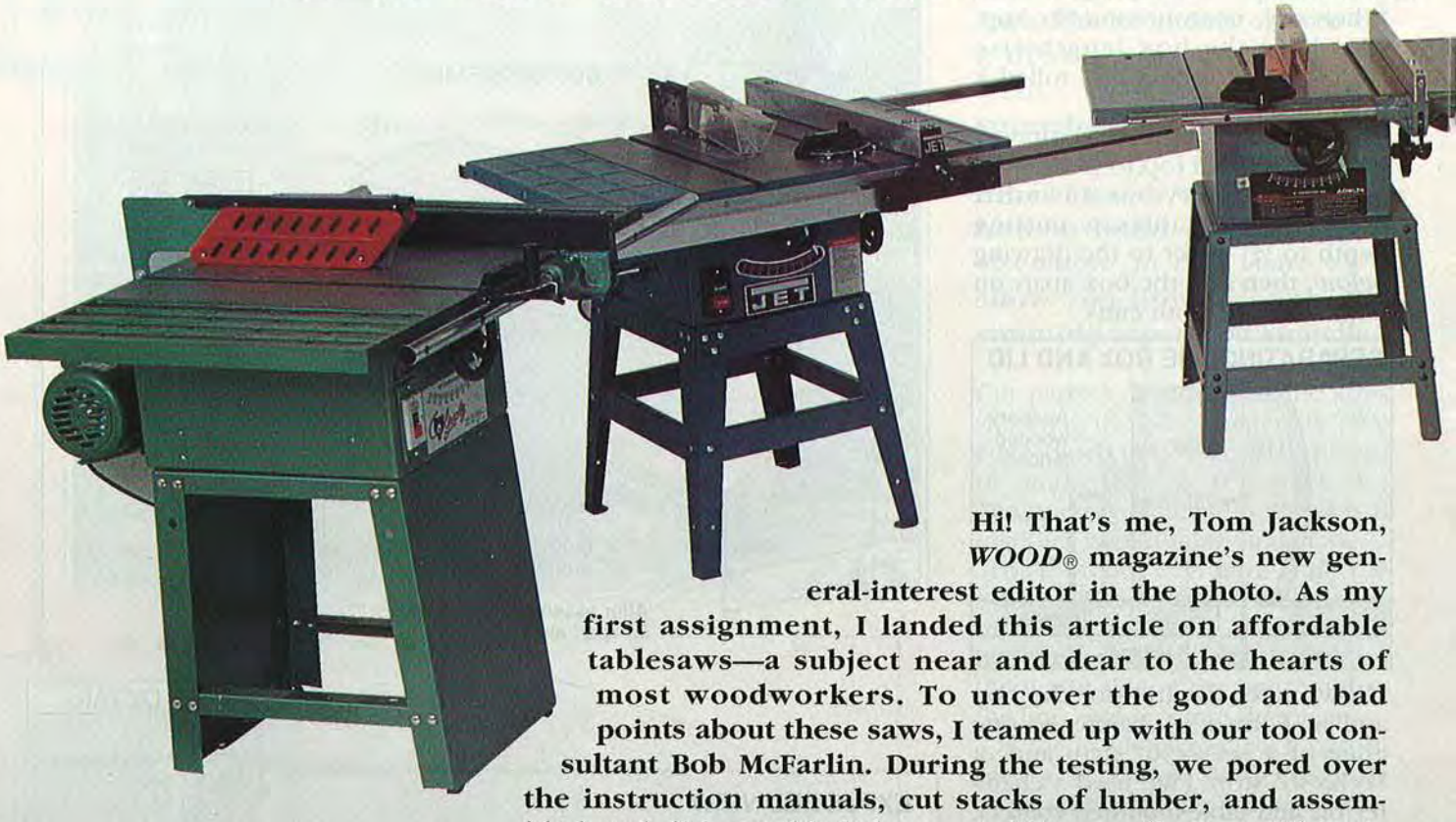




Project Design: James R. Downing Illustrations: Kim Downing Photograph: John Hetherington

$300 to $700

LET US HELP YOU GET THE



Hi! That's me, Tom Jackson, *WOOD*® magazine's new general-interest editor in the photo. As my first assignment, I landed this article on affordable tablesaws—a subject near and dear to the hearts of most woodworkers. To uncover the good and bad points about these saws, I teamed up with our tool consultant Bob McFarlin. During the testing, we pored over the instruction manuals, cut stacks of lumber, and assembled and disassembled these machines until we could just about saw in our sleep. Read on and we'll tell you what to look for when buying a tablesaw, and which of these models turned out to be the best value for the money.

Print this article

LET'S START WITH THE PARTS

The fence: A smooth mover eliminates hassles

A good tablesaw fence glides easily along its guide rails and locks parallel with the blade every time. You can work wood with a mediocre fence, but you'll find it a time-consuming nuisance.

In our tests, the tubular and extruded-aluminum guide rails gave the best results. The heftier the guide rail, the better. To accurately align angle-iron and two-piece guide rails, we often had to fidget with the fence bar.

Although it's a small point, we found a big difference in the quality of the cursors—the line or pointer that shows the blade-to-fence distance on the front rail. You shouldn't rely on it as a final measurement, but an easy-to-read cursor does give you a dependable reference point for setting up repetitive cuts.

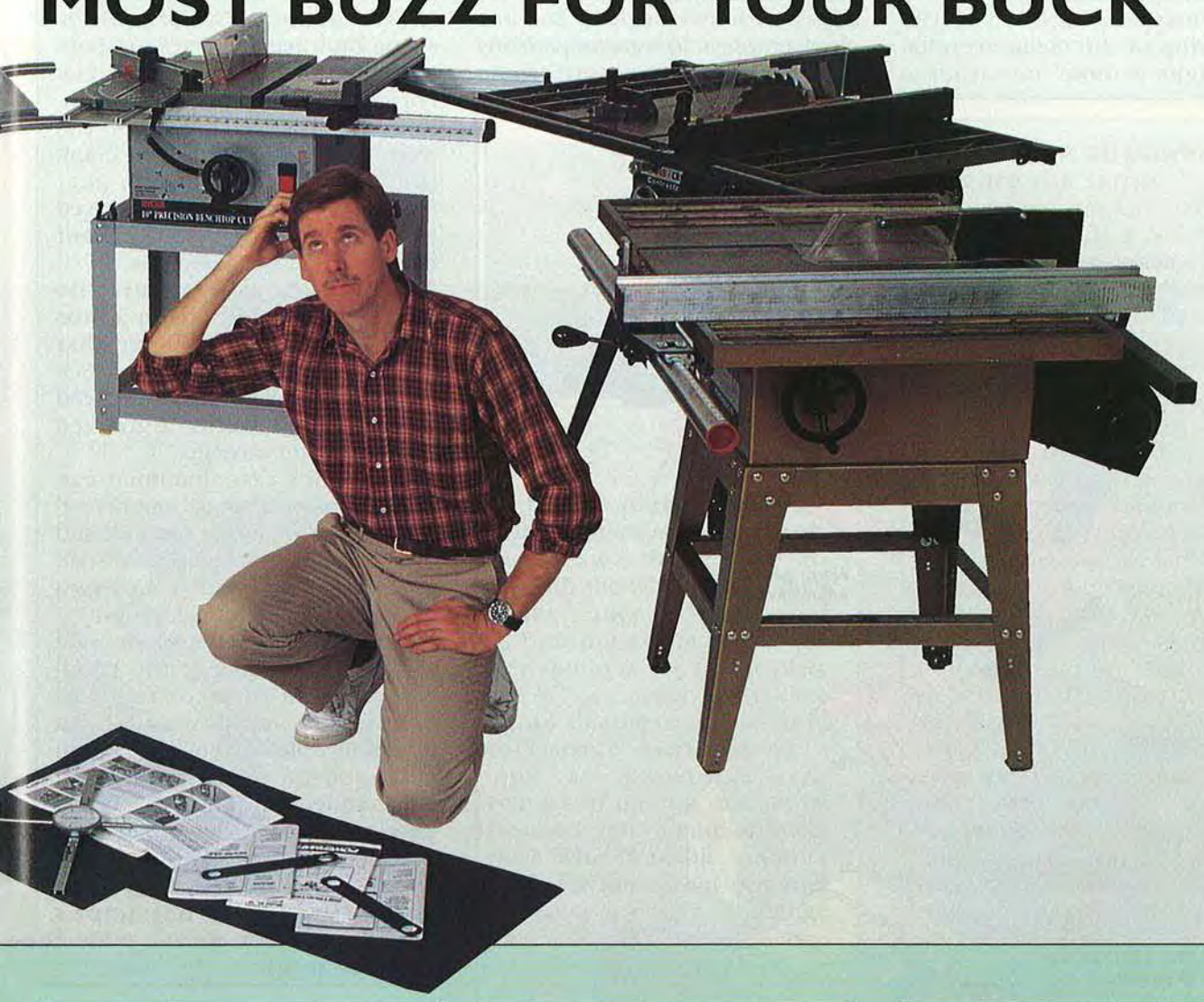
We also like to see micro-adjustment knobs that allow you to move the fence a fraction of an inch at a turn. But keep in mind that a fence that locks down inaccurately cancels any of the precision you gain by using the micro-adjustment knob.

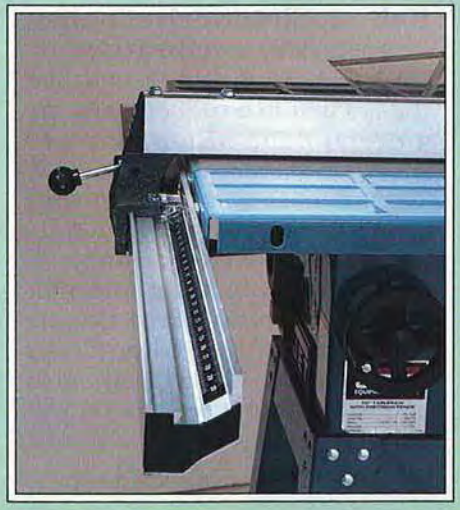
Continued

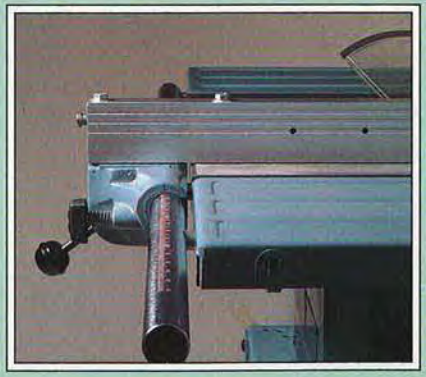
The angle-iron rails on the Sears saws required regular fine-tuning.

TABLESAWS

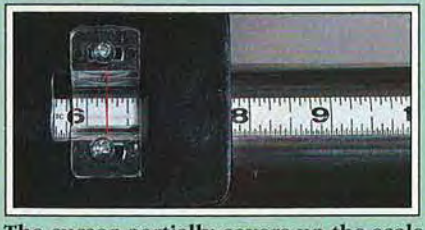
MOST BUZZ FOR YOUR BUCK







The extruded aluminum rail on the Jet saw, *left,* and the tubular rail on the Delta Contractor's Saw, *above,* provide solid platforms for smooth and accurate fence operation.



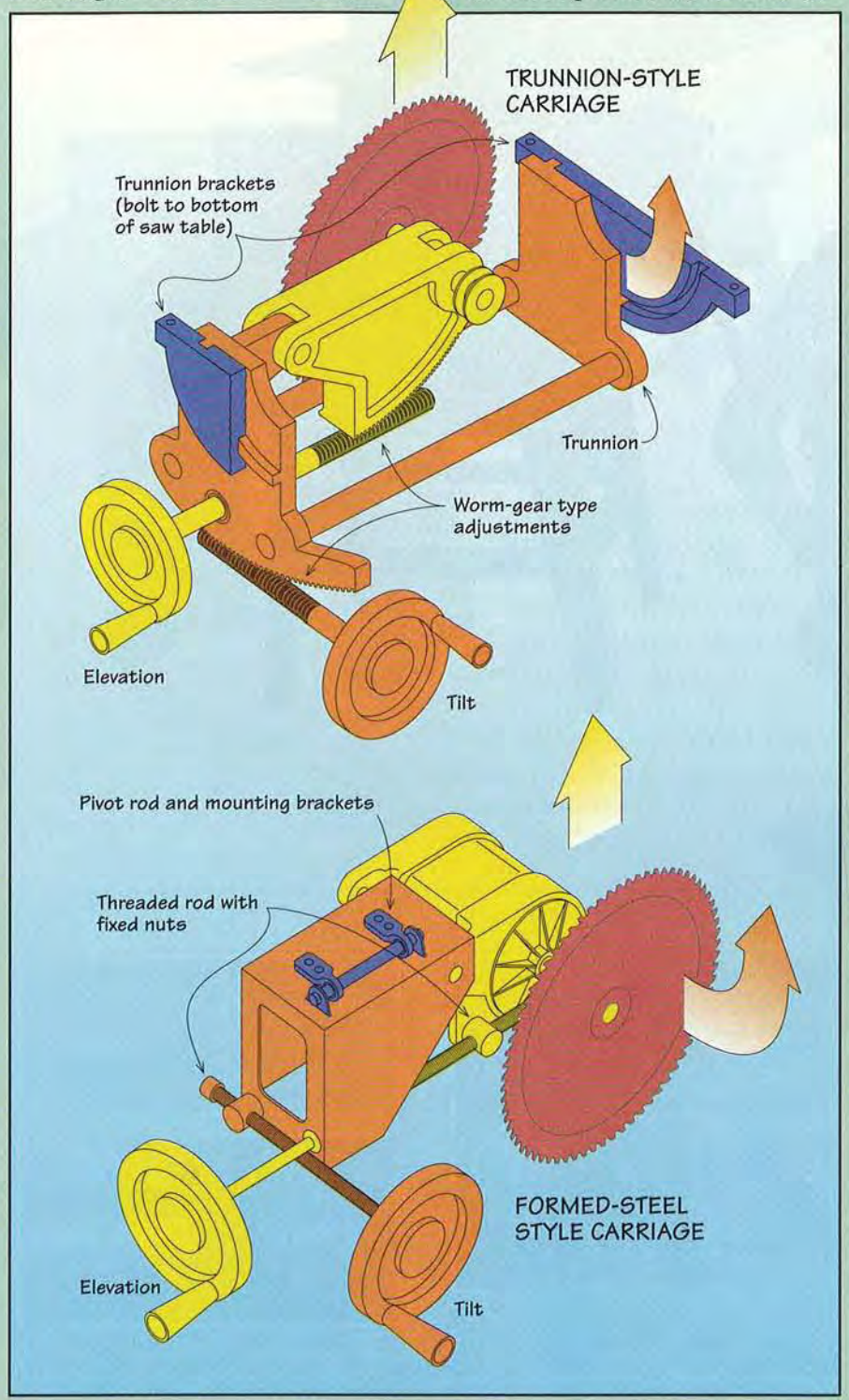
The cursor partially covers up the scale on this Delta XL-10 saw, *above*. On the Powermatic saw, you can read the cursor accurately from any angle.

TABLESAWS

The arbor flange: a small part with a big impact

A sturdy metal disk that sits flush with the face of the blade, the arbor flange rides on the arbor shaft. Any imprecision in the machining of this flange results in a slight wobble, or "arbor runout," in your blade.

Excessive runout overloads the motor and may rough up your cut edges with swirl marks. See our chart on *page 70* for comparisons of this important measurement.



The carriage: making the blade easier to move

Most belt-drive saws use cast-iron trunnions to tilt the blade, as shown at *left*. The trunnions swing on a pair of brackets bolted to the underside of the table. For changing the blade elevation, the arbor bracket hinges on the front trunnion. When you crank the handwheels, a worm gear threads its way across the curved rack gears that elevate the arbor bracket or tilt the trunnions.

Direct-drive saws secure the motor and the blade with a box-like formed-steel carriage that swings on a long pivot rod. See illustration at *left*. A threaded rod moving in and out of a grooved nut moves the carriage.

The Ryobi's cast aluminum carriage employs a single handwheel and a lever to engage both tilt and elevation. A rack-and-pinion-style gear controls the tilt and two bevel gears guide the elevation.

Trunnion-style carriages operate with fewer cranks of the handwheels than formed-steel-carriages. The one downside to a trunnion-style system is that the gears loosen over time. If you can't adjust the play, the blade may wander during bevel cuts between the fixed stops of 0° and 45°. Of the belt drive saws we tested, the Delta Contractor's Saw, Jet, and Powermatic offered this adjustment.

Belt vs. direct drive: belts absorb motor vibration

On a belt-drive saw, a belt like the fan belt in a car connects the motor to the arbor shaft, as shown in the illustration at *right*. The arbor shaft on direct-drive saws, also shown at *right*, connects directly with the motor.

On belt-driven saws, the belt absorbs and reduces most of the vibration that the motor passes along to the blade. Belts also reduce some the stress and shock sent back to the motor

Table and extensions: flat tops show quality control

The flatness of the saw table tells you a lot about the manufacturer's quality control, but won't usually affect your woodworking. Most of the wood you cut will have more warp and twist than the the worst of the tables we measured.

Table extensions on these eight saws come in formed steel or a webbed pattern of cast iron. See photos *below.* Some woodworkers prefer cast-iron extensions because they don't flex and they prevent sawdust from building up on the surface. Others say that the webs can occasionally pinch fingers. The choice is mostly a matter of personal preference.

Grizzly's cast-iron extensions won't flex or catch sawdust.

Formed-steel extensions on Delta's saws won't pinch fingertips.

You'll need a factory throat plate at least ⅛"-thick to make your own plywood zero-clearance inserts.

The throat plate: often ignored, always important

When a saw's throat plate sits flush with the tabletop and does not flex under pressure, your cuts turn out cleaner and with fewer splinters. A throat plate that's ⅛" or thicker resists flexing and enables you to build zero-clearance inserts out of plywood, as shown at *left.* Setscrews in the top of a throat plate allow you to raise or lower it flush with the table. Another plus is a wide throat opening that makes it easier to change blades, especially big dado sets.

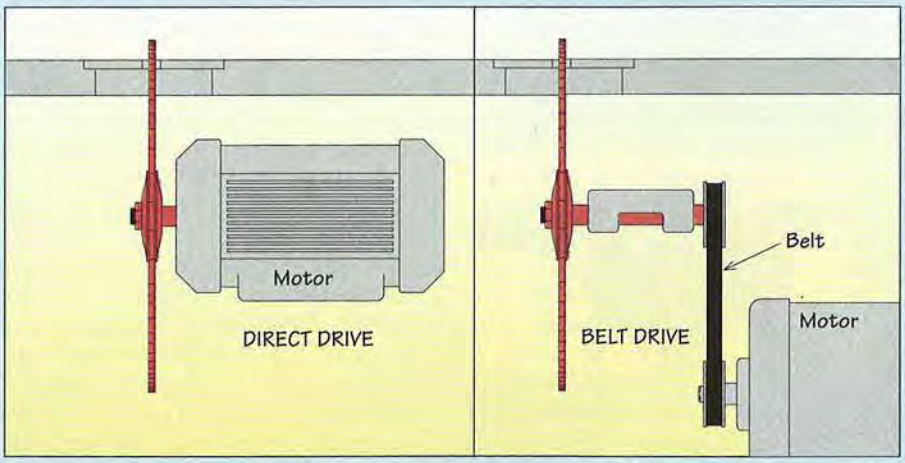
Motors: not all power ratings are the same

Motors are usually rated by horsepower, but Sears and Ryobi list "peak" horsepower rather than the "continuous" horsepower the others use. Peak horsepower equals the amount of power a saw generates under a heavy load—typically just before it burns out. To make the comparisons fair in our chart we've assigned continuous horsepower figures to all the saws. In your own shopping, compare amps rather than horsepower to avoid confusion. More amps equals more power.

The enclosures for these motors include "open drip-proof" (ODP) and the more expensive "totally-enclosed fan-cooled" (TEFC) housings. If you can see the wire windings inside the motor housing, you've got an ODP-type motor. TEFC motors, capped on one end with an external fan, offer the advantage of sealing out dirty air and sawdust.

when the blade hits a knot or section of reverse grain. All the heavy-duty (1.5 hp) saws we tested used belt-driven mechanisms.

The medium-duty (1 hp) saws we looked at all had direct-drive mechanisms with the exception of the Ryobi. It relied on two short belts. We didn't experience any vibration problems on the direct-drive saws we tested, but over the years the bearings that hold the arbor shaft on these saws will wear, resulting in some blade wobble or vibration.



Continued

TABLESAWS

GETTING PERSONAL
Our machine-by-machine comparison

For comparison's sake we divided these eight saws into two categories: heavy duty and medium duty. The heavy-duty saws use belt-driven, 1.5-hp motors with trunnion-style carriages. The medium-duty saws, in general, offer direct-drive, 1-hp motors and formed-steel carriages.

Consider your power needs carefully. Medium-duty, 1 hp saws will bog down when you try to rip hardwoods like oak that are thicker than 1". Even crosscutting thick hardwoods may strain the limits of a medium-duty saw. The heavy-duty saws we tested, however, will perform these chores safely and without straining.

If you only need a saw for occasional small projects, such as toys and birdhouses, or for cutting plywood and softwoods, a medium-duty saw will serve your needs well. If you want to build big furniture pieces or regularly rip through thick hardwoods, you're better off buying a heavy-duty saw. With that in mind, here's what we found.

MANUFACTURER/ IMPORTER	MODEL	MOTOR: CONTINUOUS HORSEPOWER	MOTOR: AMPS 110/220 VOLTS	MOTOR: DRIVE MECHANISM	MOTOR: ENCLOSED/OPEN
CRAFTSMAN	29884	1½	13/6.5	B	ODP
	22688	1	11.5/--	D	ODP
DELTA CONTRACTOR	34444	1½	14.2/7.1	B	ODP
DELTA XL-10	36380	1	10/--	D	ODP
GRIZZLY	G1022	1½	17.2/8.6	B	TEFC
JET	JTS-10JF	1½	18/9	B	TEFC
POWERMATIC	63	1½	18/9	B	TEFC
RYOBI	BT3000	1	13/--	(1)	UN

Abbreviations, in alphabetical order:

(Al) Angle iron
(B) Belt drive
(Cl) Cast iron
(D) Direct drive
(EA) Extruded aluminum
(FS) Formed steel
(ODP) Open, drip-proof
(T) Taiwan
(TB) Tubular
(TEFC) Totally enclosed, fan-cooled
(TN) Thread and nut gear
(TR) Trunnion
(U) United States
(UN) Universal motor
(WG) Worm gear
Taiwan

HEAVY-DUTY SAWS

Delta Contractor's Saw, Model 34-444

Cut after cut this saw gave us smooth results and hassle-free operation. With a few minor exceptions, it exceeds all of our requirements.

A visual inspection revealed excellent casting and finish work—no burrs or rough edges anywhere. The instruction manual reads easily, and assembly and adjustment proceeded without a hitch. The throat plate adapts well to zero-clearance inserts, and the wide throat opening eases blade changes.

In our wood-cutting tests, the motor ran smoothly with power to spare. The minimal arbor runout translated into clean edges on all the boards we cut. Delta's Jet Lock fence system doesn't glide as effortlessly as Powermatic's Vega fence, or other aftermarket fences, but it's rugged, plenty accurate, and easy to use.

We only found two drawbacks on this saw. The cursor on the fence doesn't read well from the side, and the blade guard doesn't hold itself up when you change blades—minor quibbles when compared to the saw's overall performance.

Jet, JTS-10JF

In running down our checklist of important components, the JET got a star by every one. We found a few minor flaws, but Jet put the precision where it matters most—in the arbor and fence.

Our tests of arbor runout measured less than .001" at the blade, the best of all the saws. The hefty

Powermatic, Model 63

At first glance the flawless fence, rugged construction, and powerful motor on this saw, impressed us. But being the most expensive saw in the bunch, we were expecting better quality control.

With its big 2" tubular front rail, the Vega fence system on this saw worked perfectly. The fence bar floated on the guide rails and locked with deadly accuracy. The cursor, a poor afterthought on most saws, remained readable from any angle.

Our tests of manufacturing quality proved to be less encouraging. The best we could align the blade to the miter slot was .009" out of parallel. In this price range, the alignment should have measured no more than .003" out. We checked another saw of the same model and got better results, but the inconsistency concerned us. Powermatic says their warranty will cover such defects. Our tests also showed the table much less flat than the rest, .030" across the diagonal as compared with .010" maximum for the others.

A CUTTING COMPARISON OF EIGHT TABLESAWS

	TABLE								TILT AND ELEVATION		FENCE	PERFORMANCE							OVERALL RATINGS					
	SIZE (INCHES)	SIZE WITH EXTENSIONS (INCHES)	TABLE TYPE	EXTENSION TYPE	TABLE DEPTH FRONT OF BLADE 1" CUT (INCHES)	RIP TO RIGHT OF BLADE (INCHES)	DEPTH OF CUT 90°/45° (INCHES)	CARRIAGE TYPE	TYPE	ADJUSTABLE WORM GEAR	TYPE	GUIDE RAIL TYPE	FENCE ALIGNMENT TO MITER SLOT (5)	ARBOR RUNOUT AT 10" (6)	TABLE FLATNESS (7)	THROAT PLATE	EASE OF ELEVATION/TILT	POWER	VIBRATION	PERFORMANCE	VALUE	COUNTRY OF ORIGIN	WEIGHT (POUNDS)	LIST PRICE	SELLING PRICE (3)
	20 x 27	44 x 27	CI	CI	15¼	24	3⅜ - 2¼	TR	TN	--	FS	AI	F	G	F	G	F/F	E	G	8	7	U	248	$500	$500
	20 x 20	40 x 20	CI	CI	10½	24	2½ - 2 5/16	FS	TN	--	FS	AI	P	P	F	P	F/F	G	E	7	8	U	160	330	330
	20 x 27	40 x 27	CI	FS	13¾	25	3⅛ - 2⅛	TR	WG	YES	EA	TB	G	E	G	E	E/E	E	G	10	9	U	251	788	620
	22¼ x 20⅜	38⅜ x 22¼	CI	FS	11¾	25	2 7/16 - 1 11/16	TR	TN	--	FS	TB	P	E	F	F	F/G	G	E	7	7	T	163	467	400
	20 x 27	40½ x 27	CI	CI	13¼	26	3⅛ - 2⅛	TR	WG	NO	FS	TB	F	E	G	E	E/E	E	E	8	8	T	255	375	375
	20 x 27	39½ x 27	CI	FS	11¼	30	3⅛ - 2⅛	TR	WG	YES	EA	EA	G	E	E	E	E/E	E	G	9	9	T	223	692	530
	20 x 27	40 x 27	CI	CI	13¼	26	3⅛ - 2⅛	TR	WG	YES	EA	TB	E	E	P	E	E/E	E	P	7	6	T	300	969	700
	26 x 22½	42 x 22½ (2)	CA	CA	16 (3)	30	3 9/16 - 2½	FS	(4)	YES	EA	EA	E	E	E	P	E/G	G	E	8	8	U	75	1060	525

NOTES:

1. Dual Belt
2. * With sliding miter table, total depth extends from 22½ to 48"
3. Includes sliding miter table
4. Dual system uses worm gear and gear and track

5. E .0005 to .002; G .003 to .006; F .007 to .010; P above .010
6. E .001 to .003; G .004 to .006; F .007 to .010; P above .010
7. Table flatness reflects the sum of three different measurements: side-to-side, front-to-back, and diagonal. E .002 to .010; G .011 to .020; F .021 to .030; P above .030

E Excellent; G Good; F Fair; P Poor

extruded-aluminum fence guide rail provided smooth, solid support for the fence bar, and the locking mechanism aligned the bar perfectly.

A slight bulge in the fence bar where it bolts to the locking mechanism gave us our only major cause for concern. Jet says this was an intermittent problem and that they have retooled to correct it. We also ran across a few paint nibs on one extension wing that could scratch a board. To correct the problem we had to sand the nibs down and apply some touch-up paint.

Sears Craftsman, Model 29884

This saw offers most of the heavy-duty saw features and tries to save you some money by omitting a few of the less critical components. The result: a sturdy, dependable saw that requires a little bit of your time and patience.

On the plus side, the blade is pushed by a strong, belt-driven motor underneath a flat table and sturdy extension wings.

The biggest sacrifice on this saw is the fence. The angle-iron design lacks the smooth operation and accuracy of more expensive models. A Biesemeyer fence, offered as an accessory, eliminates this problem, but also bumps the price up to about $750.

Another cost-cutting device, the formed-steel arbor flange is a sure trap for sawdust and showed a runout of .005"—not bad, but we'd prefer readings below .003". Finally, the thread-and-nut system that moves the cast-aluminum carriage requires 34 cranks to elevate and 64 cranks to fully tilt. Downright aerobic exercise!

Grizzly, Model G1022

This saw copies many of the Delta Contractor's saw features and offers a competitive price. It gobbles up wood with the best of them, but the fence didn't always perform up to par.

On the positive side, the measurements for table flatness and arbor runout came in amazingly close to perfect. The thick throat plate and wide throat opening meet all our expectations, and the TEFC motor draws a powerful 17.2 amps. In operation, the belt drive on this saw produced less vibration than any we tested.

Our main grumble concerned the fence. The feel of sliding the fence along the guide rail was tolerable, but not as smooth as most other tubular rails. And after several hours of use, we found that the fence came out of alignment with the miter slot. Correcting the problem required a partial disassembly and realignment of the fence bar.

Continued

TABLESAWS

MEDIUM-DUTY SAWS

Sears Craftsman, Model 22688

For small projects and occasional woodworking, this direct-drive saw delivers perfectly adequate power and performance. This is the least expensive saw in our test, making it a good value for the money. The small size of the table may require outfeed tables or rollers to handle plywood sheets, but for a small shop the size helps to conserve space.

This saw's weakest feature, the stamped-steel arbor flange, demonstrated more runout than any we tested. Most of the other shortcomings deal with convenience. Assembly and adjustment proved tricky. Tilting and elevating the blade demanded plenty of elbow grease. And the narrow throat opening made blade changing difficult.

Delta XL-10, Model 36-380

In this price category, the overall machining and finishing quality of the XL-10 impressed us. A thread-and-nut system controls the tilt and elevation but unlike the other direct-drive saws, this one employs a cast-iron trunnion carriage. The difference: a smooth cut with minimum vibration.

The main drawback to this saw turned out to be the two-piece tubular fence rail. It lacks the rigidity of a one-piece rail, and we had to bend one of the formed-steel extension wings down to get it to bolt to the fence rail. Delta says reversing the assembly procedure on the rails and extensions may help to alleviate this problem.

We were also concerned about the durability of the plastic nut used in the thread-and-nut system. Ours broke during shipping, and we'd like the saw better if the nut were metal.

Ryobi, Model BT3000

With this innovative design, Ryobi reinvented the tablesaw. Out of the box, this saw was up and cutting within a half-hour. Tolerances measured as good or better than the rest of the saws we tested, the fence glides as if on air, and the tilt-and-elevation mechanism cranks with ease. For basement woodworkers, the extensive use of rust-proof aluminum parts bodes well and makes this saw very portable.

The design employs two grooved cast-aluminum tables that travel right or left on the top of the fence guide rails. The sliding miter table also moves from front to rear, giving you a full 16" crosscut capacity. At 90°, the depth of cut is sufficient to slice through a nominal 4×4. A router or jigsaw can be mounted under the accessory table and used with the fence.

Alas, all is not perfect. The throat plate flexes and doesn't sit level with the table. (Ryobi has recently introduced a set of accessory throat-plate inserts that help). Changing belts (we burned one) requires a trip to the dealer, but Ryobi says their two-year warranty will cover the cost. And the 13-amp universal motor we tested lacked muscle, a problem Ryobi has recently addressed by upgrading the motor to 15 amps.

OUR RECOMMENDATIONS

Heavy-duty saws

The Delta Contractor's saw took the top spot in this category. If you want a rock-solid saw that will last a long time and give you precise results, you won't regret buying this saw. The Jet JTS-10JF came in a close second. It offers an attractive price and all the features that make sawing wood accurate and hassle-free. The specs on these two saws ran neck-and-neck, but we gave the edge to Delta for its excellent casting and finish work.

Medium-duty saws

Let the price be your guide in this category. If you're on a tight budget, the Craftsman direct-drive saw delivers acceptable results. For another $100 or so, the Delta XL-10 gives you less arbor runout, a better fence, and a sturdier carriage. If you have yet another $100 to spend, however, consider the Ryobi BT 3000. Its price falls within the heavy-duty saw range, but keep in mind that the Ryobi fence is as good as most $200 aftermarket fences. And as a bonus you get precise cutting right out of the box, an accessory table, portability, a high-quality carbide-tipped blade, and dozens of unique features.

Written by Tom Jackson Technical consultant: Bob McFarlin Illustrations: Kim Downing Photographs: John Hetherington

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312	PRODUCTION OFFSET LAMNT TRIMMR	164
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315-1	7 1/4" BUILDERS SAW	118
330	SPEED BLOCK FIN SANDR $57 AFT. RBT	47
332	QUIKSAND 5" RNDM ORB W/STIKIT PAD	63
332K	332 W/CASE & 100 SHEETS PAPER	89
333	QUIKSAND W/HOOK & LOOP, DUSTLS	73
333K	333 W/CASE & 50 SHEETS PAPER	99
334	QUIKSAND W/STIKIT, DUSTLESS	73
334K	334 W/CASE & 100 SHEETS PAPER	99
345	SAW BOSS 6" CIRCULAR SAW	104
347	7 1/4" FRAMERS SAW 15 AMP, 10.25 LBS	128
351	3" X 21" BELT SANDER	142
352	3" X 21" BELT SANDER W/DUST BAG	147
352VS	3" X 21" VS BELT SANDR W/DUST BAG	158
360	3" X 24" BELT SANDER W/DUST BAG	182
361	3" X 24" BELT SANDER	174
362	4" X 24" BELT SANDER W/DUST BAG	188
363	4" X 24" BELT SANDER	184
410	UNDERSCRIBE LAMINATE TRIMMER	150
411	MITER FOLD LAMINATE TRIMMER	165
447	7 1/4" FRAMERS SAW W/BRAKE 15 AMP	138
505	1/2 SHT FIN SANDER	118
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556	BISC JOINER W/CASE & TILT FENCE	177
556K	SAME AS ABOVE W/1000 BISCUITS	199
690	1 1/2 HP ROUTER W/1/4" & 1/2" COLLETS	130
690K	690 W/CS, EDGE GUIDE, & TEMP GD KIT	169
9690	1 1/2 HP ROUTER W/CASE	139
691	1 1/2 HP "D" HANDLE ROUTER	143
693	PLUNGE BASE ROUTER, 1 1/2 HP	164
695	SHAPER TABLE W/ 1 1/2 HP ROUTER	213
696	SHAPER TABLE	123
2620	3/8" VSR DRILL, 0-1200 RPM W/CHK	99
5008	DOVETAIL TEMPLATE	76
5009	MORTISE & TENON JIG	44
5116	OMNI JIG	258
6931	PLUNGE ROUTER BASE	74
7116	*NEW 24" OMNIJIG*	289
7310	LAMINATE TRIMMER, 5.6 AMP	88
7312	OFFSET TRIMMER	122
7319	TILT BASE TRIMMER	89
7335	5" RANDOM ORBIT SANDER, VS	128
7335K	7335 W/CS, DUST EX SYS, 100 SHTS PPR	172
7336	6" RANDOM ORBIT SANDER, VS	132
7336K	7336 W/CS, DUST EX SYS, 100 SHTS PPR	179
73333	RANDOM ORBIT DUST EXTRACTION	24
7518	3 1/4 HP FIXED BASE ROUTER-5 SPEED	262
7519	3 1/4 HP FIXED BASE ROUTER-1 SP	228
7536	2 1/2 HP FIXED BASE ROUTER	197
7537	2 1/2 HP FIXED BASE "D" HNDL RTR	207
7538	3 1/4 HP PLUNGE ROUTER-1 SPEED	228
7539	3 1/4 HP PLUNGE ROUTER-5 SPEED	262
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7549	BARREL GRIP BAYONET SAW	143
7700	*NEW 10" LASERLOC MITER SAW*	338
9118	PORTA PLANE KIT W/CASE, CRBD BLD	203
9314	4 1/2" TRIM SAW KIT	148
9315	7 1/4" BUILDERS SAW KIT	138
9345	SAW BOSS 6" CIRCULAR SAW KIT	122
9637	TIGER SAW VAR SPD RECIP SAW KIT	138
9647	TIGER CUB RECIP SAW KIT	115
9840	CRDLS DRILL KIT W/2 BAT, CS KYLS CK	148
9853S	SAME AS ABOVE BUT W/2 BATTERIES!	177
97310	LAMNT TRIMMR KIT W/4 BASES & CS	199
97751	1/2" VS, 2 SPD HAMMER DRILL KIT	145

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EY6100CRKW	*NEW PREDATOR* 12V CORDLESS KIT VSR W/KYLS CHUCK, 22 STAGE CLUTCH W/2 BAT, CASE, & CHARGER	192

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D38VSR	3/8" VSR DRILL, 4.0 AMP, 0-2500 RPM	59

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33-060	NEW SIDEKICK 6 1/2" FRAME & TRIM SAW	369
37-070	*NEW* 6" VS BENCH JOINTER	249
40-560	16" SCROLL SAW, 2 SPEED	179
50-075	DUST COLLECTOR SWEEPER, 3/4 HP	245
50-175	*NEW* KICKSTAND PRTBL WORK STAND	169

Milwaukee

0406-1	9.6V KYLS CDLS DRILL KIT W/2BAT, CS	169
0407-1	SAME AS ABOVE BUT 12 VOLT	174
6010	1/2 SHEET FINISHING SANDER	119
6017	1/4 SHEET FINISHING SANDER W/BAG	55
6125	5" RANDOM ORBIT SANDER	112
6126	6" RANDOM ORBIT SANDER	115
6256	TOP HANDLE JIG SAW	145
6365	7 1/4" CIRCULAR SAW, 13 AMP	120
6490	*NEW* 10" MITER SAW INC 80T CARB BLD	249
6507	VAR SPEED SAWZALL W/BLADES & CSE	143
6508	SAME AS 6507 BUT W/PERMANENT CRD	143
6527	SUPER SAWZALL W/BLADES & CASE	169
6528	SAME AS 6527 BUT W/PERMANENT CRD	169

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DW360	7 1/4" SAW W/BRAKE	139
DW430	3" X 21" DUSTLESS BELT SANDER	164
DW431	3" X 21" DSTLS BELT SANDER VAR SP	162
DW610	1 1/2 HP ROUTER, 9 AMP	147
DW614	1 1/4 HP PLUNGE ROUTER	143
DW615	1 1/4 HP PLUNGE ROUTER, VAR SP	158
DW624	3 HP HVY DUTY PLUNGE ROUTER	245
DW625	3 HP HVY DTY PLUNGE RTR, VAR SP	275
DW682K	BISCUIT JOINER KIT W/100 BISCUITS	224
DW705	12" COMPOUND MITER SAW	358
DW944K2	9.6V CORDLESS KIT W/2 BATTERIES	148
DW945K2	12V CORDLESS KIT W/2 BATTERIES	168

HITACHI

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D3606VAKBE	12V CORDLESS DRILL KIT W/2 BAT	189
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SV12SA	4 3/8" PALM GRIP SANDER	49
SB75	3"x21", 2 SPEED BELT SANDER	136
SB10T	4"x24", 2 SPEED BELT SANDER	180
CJ65V2	TOP HANDLE JIG SAW W/CASE	155
P20SB	3 1/4" PLANER, 3.4 AMP	89
TR6	LAMINATE TRIMMER	92
M8V	VAR SPEED PLUNGE ROUTER, 1/4"	149
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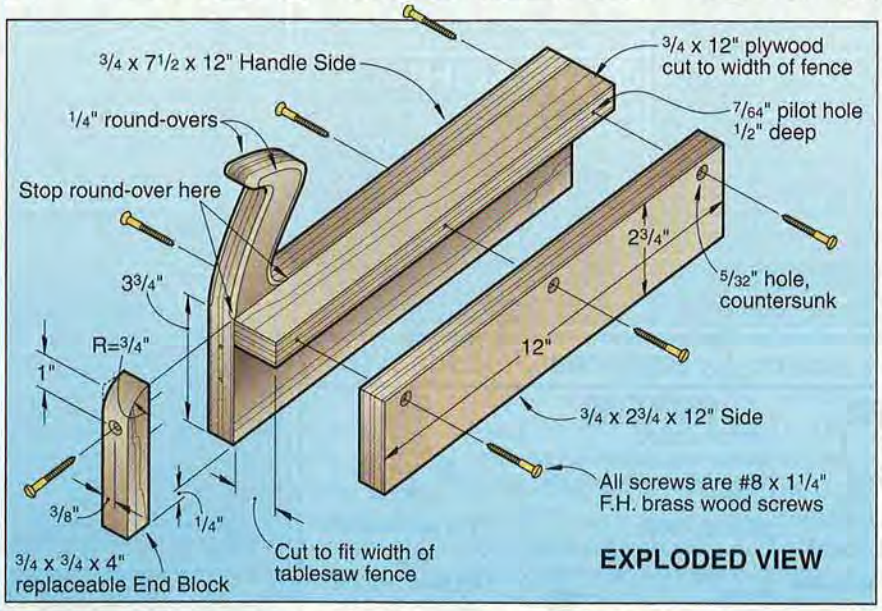
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1/4" round-overs
7/64" pilot hole 1/2" deep
Stop round-over here
2 3/4"
3 3/4"
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R=3/4"
1"
12"
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Project Design: Jim Boelling Illustration: Kim Downing Photograph: Wm. Hopkins

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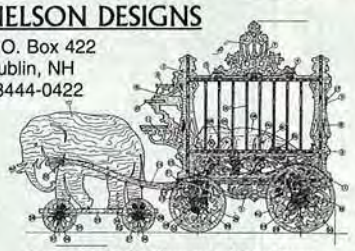

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"Well, word got around about how much money I had saved and that opened a whole new world of opportunity. Ever since then I've been like a cat on a hot tin roof! **The first year I did 15 roof jobs. Almost double that the second year, and had a huge backlog.** Most of these were big jobs like the county home, the Chevy-Buick garage, bank buildings, city hall. Big jobs mean big money!

"The business I used to be in had been pretty good to me, but I really had to *work* both nights and days. **With Pace, business just seems to fall into your lap.** I don't really do any promoting or 'selling' ... most of my sales come from referrals, and my phone's ringing all the time.

"What I like to tell people is that Pace offers a fine income opportunity. You can start working as little as two hours a week and then go full time when your income exceeds your regular job."

What our successful Pace distributor is too modest to say is that he actually did over **$100,000 worth of roofing business last year, in spite of living in a depressed farming area!** And that's working less than half of the year, leaving the rest of the time for his family and other interests.

What makes Pace such a good business is that it costs a fortune for schools, hospitals, plants and other commercial buildings to have roofing companies repair or re-do their roofs. Pace bypasses the roofer–lets the building owner apply Pace Seamless Spray right over the old roof ... **and the smallest Seamless Spray order earns you over $1,850 in commissions.**

Pace ships the Seamless Spray equipment on Free Loan. Your customer pays only for the roofing products. His own men apply it (or if you want to make even more money, you can handle the application, too). It's as simple as that.

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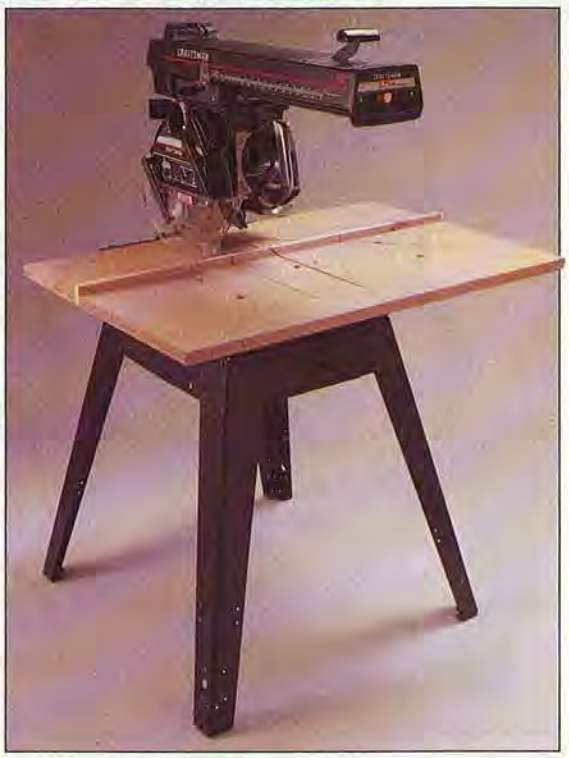
Sears looks to the past with new radial-arm saws



Sears recently took a big leap forward by taking a small step backward. In early 1993 the retailer replaced its "New Century" line of radial-arm saws with models that closely resemble machines offered by the merchandiser years ago. Why? The New Century saws proved less accurate, less reliable, and harder to adjust than the saws they replaced. I speak from experience because my father owns a Sears radial-arm saw built in the 1970s. This saw has proved far superior to the New Century version I purchased in 1988.

I recently had the opportunity to test the new model 19632—a middle-of-the-line version that sells for $600 regularly ($550 on sale). Sears sells similar models with differently sized motors for $550 ($500 on sale), and $650 ($600 on sale).

Like the older saws, the new line from Sears has sturdy steel rods instead of a stamped-steel track for supporting the blade carriage. The carriage rides along these rods on four bearings that I found easy to adjust. Gone from the new saws are the digital controls I found little use for.

The new saws have automatic bevel indexing at 0°, 45°, and 90°. The saw has automatic miter indexing at 0° and 45° left and right. Like most settings on the saw, I found these easy to adjust, and they stayed in alignment throughout my trials.

Even though this saw closely resembles older models, it is not an exact clone. Sears added a significant improvement by including a guard that's safer than any I've seen on a radial-arm saw. It works like this: To crosscut a workpiece, you must manually squeeze a lever built into the handle. This lifts the guard over the fence. You release the lever once the guard goes over the fence. Even if you place your hand behind the blade, the guard will push it out of the way. Removing and reinstalling the guard during blade changes requires some effort, but I consider this small hassle worth it.

Unfortunately, the saw comes with a 28-tooth blade that I found totally inadequate. To get decent cuts you will have to buy a high-quality sawblade with at least 40 carbide teeth.

As with most Sears stationary tools, you can figure on devoting at least a day to assembly and adjustments. Once set up, I think you'll be pleased with the performance and safety of these new radial-arm saws.

—Tested by Bob McFarlin

Sears models 19622, 19632, and 19642 radial-arm saws. Available at Sears stores nationwide.

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Some woodworkers avoid scrapers because using them for long periods of time can wear out your thumbs and fingers. Veritas developed this scraper holder to solve that problem.

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I used the scraper holder to clean up a large tabletop glued up from several boards. Despite the project's large size, I scraped the entire surface with little finger fatigue. I especially like how the grips allow you to bear down hard with plenty of control, and scrape on a push or pull stroke. This is a well made tool and it will increase the pleasure and productivity you get from scraping wood.

—Tested by Bob McFarlin

Veritas Scraper Holder, $24.95. Veritas Tools, Inc., 12 East River St., Ogdensburg, NY 13669, or call 800/667-2986.

Continued on page 78

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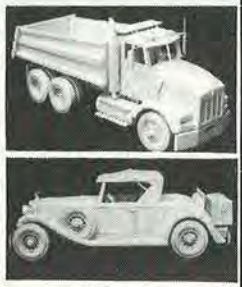

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PRODUCTS THAT PERFORM

SHOP TESTED

Continued from page 77

Bucket topper gives you a portable workshop

When you're not woodworking, chances are that a lot of you get called into service as the resident fix-it person. The Tool Keeper fits over the top of most 5-gallon buckets and helps you organize the many small tools it takes to get these jobs done.

After I loaded up the Tool Keeper, I discovered that the inside of the bucket remained free for bulkier items such as portable electric drills and extension cords. With all the necessary tools easy to see and reach, I completed my fix-up chores with maximum efficiency and minimum frustration. I was also pleased that the bucket remained stable and resisted tipping over even when fully loaded.

The only shortcoming I found was that the design designates too many tool slots for box-end wrenches. With some 80 slots for tools, I would have preferred a few more places for chisels or drywall trowels. Some people may want to have space for wrenches, but I don't usually use my mechanic's tools and home repair tools on the same job.

The Tool Keeper makes a lot of sense for anybody who gets called on for a lot of repairs around the home. For the price, you get an arm-load of convenience, and if you've ever dashed back to the shop to get a tool that you didn't have room to carry in your hands, the Tool Keeper can end that hassle.

—Tested by Dave Henderson

Tool Keeper, $11.99, ppd. Ramparts, Inc., 53 Belcher Road, Blairstown, NJ 07825. Call 800/342-7267.

A new twist on holdfasts improves clamping control

I'm always intrigued when a manufacturer attempts to improve on an old-fashioned woodworking tool. In this case Veritas took a traditional holdfast, put a knob on the top, and renamed it the Veritas Hold Down.

On the old holdfasts you simply drop the post into a hole in your bench and tap the top with a hammer to clamp the workpiece under the front arm. The Veritas Hold Down replaces the hammer tap with pressure from the screw action of the knob, and also uses grooves, similar to those on a ring-shank nail, help the post to get a better grip on the hole.

I used the Hold Down to secure a piece of pine, and while I sanded and chiseled the board stayed put. I particularly like how the knob allowed me to fine tune the downward clamping pressure.

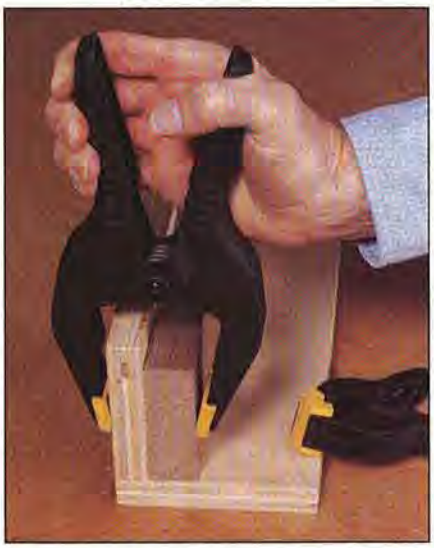
This tool will earn its keep, especially for those of you who need a quick, one-handed clamp for benchtop work. It takes just seconds to drop the post in a hole and twist the top. The price may seem steep, but the Hold Down's sturdy construction—a zinc-aluminum arm and a machined steel post—makes it the type of tool you can pass along to future generations of woodworkers.

—Tested by Chuck Hedlund

Veritas Hold Down, $55.45 ppd. Veritas Tools, Inc., P.O. Box 1720, Ogdensburg, NY 13669. Call 800/667-2986.

You get a great grip with these new spring clamps

When you need a third hand around the shop, nothing beats a spring clamp. But sometimes you need two hands to wield these otherwise handy helpers. The new Quick Grip Spring Clamps solve that and other problems with a completely new design.



In a hand-to-hand comparison, I found the narrower grip on these glass-filled nylon clamps easier to squeeze open than their steel counterparts. The rounded, ribbed handles also give your hands a surface that's easier to hold on to.

What I liked even better was that these hold the workpiece tighter than any spring clamps I've used. The springs are plenty strong, and the yellow padded tips really grip the workpiece. The end result—I got true one-handed operation and slip-free clamping. These clamps enable me to work faster and eliminate a lot of the hassles of setting up jigs or temporary clamps in the shop.

—Tested by Tom Jackson

Quick Grip Spring Clamps, in 1", 2", and 3", jaw sizes for about $2, $3, and $7 respectively. American Tool Companies, Inc., 301 South 13th St., Suite 600, Lincoln, NE 68508, or call 402/435-3300.

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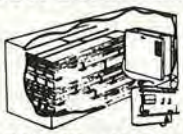

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TRY YOUR HAND AT VINEGAR PAINTING

A FINISH WHOSE TIME HAS COME...AGAIN

Anything goes when you finish with non-toxic, homemade vinegar paints.

If you liked dabbling with finger paints in grade school, you're going to love this finishing technique. And it's just about as easy, too.

Naturally noteworthy

Decorating wooden items such as furniture, boxes, and picture frames with vinegar paint first took hold during the 19th century. The paint was an inexpensive, colorful, easy-to-apply finish that people could make themselves.

Later, interest in vinegar paint waned. Now the old paint has found new popularity. That's because of the decorative effects you can achieve with it, and because it's so environmentally friendly. You'll find most of the ingredients right in your kitchen.

Depending on the applicators and colors you use, you can create a dizzying array of colorful patterns that add pizzazz to many projects, especially ones for kids. See above for just a few of the playful designs we were able to achieve in our shop.

Our recipe for success

Sand new wood surfaces, if necessary, and apply a sanding sealer or high-quality primer. Then finish with one or two coats of semi-gloss enamel (we used beige), and let it dry completely.

Here's what you need to batch up your own vinegar paints:

- ½ cup white vinegar
- 1 teaspoon white sugar
- Few drops of liquid dishwashing detergent
- Powdered poster paints (tempera paints available at art-supply stores or through our Buying Guide source.)

For supplies, be sure to have these items on hand:

- Liquid measuring cup
- Measuring spoons
- Small mixing bowls
- Variety of applicators such as brushes, sponges, wadded paper or plastic wrap, nylon scrub pads, modeling clay, etc.

Now, put the stuff together to make some paint. Begin by combining the first three ingredients to make the base solution. Then, using a separate mixing bowl for each color, stir together four tablespoons of powdered poster paint and enough base solution to make a paste. Stir in additional base solution until the mixture matches the consistency of cream.

Are we having fun yet?

Vinegar paints are designed to be translucent topcoats, letting an undercoat finish show through. In other words, don't try to finish raw wood with them.

Working on one area of your project at a time, brush on a topcoat of vinegar paint, being sure to let the undercoat show through. You'll have about 15 minutes to "pattern" the topcoat before the paint dries.

Experiment to see the variety of effects you can get with different applicators. (Don't forget to try using your fingers!) You can always wipe off mistakes with a vinegar-dampened cloth and start over. When you achieve the effect you want, let the topcoat dry for at least 24 hours, and then spray on a coat of varnish to protect your artistry.

Buying Guide

Powdered Paint (Tempera), 16 oz. container (one primary color), $7.45 ppd.; four 16-oz. containers (four primary colors), $22 ppd. Order from The Art Store, 600 Martin Luther King Parkway, Des Moines, IA 50312. Or call 800/652-2225.

Photograph: Wm. Hopkins

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GETTING PICKY ABOUT PINE

CHOOSING THE RIGHT WOOD CAN MAKE OR BREAK YOUR PROJECT

Buying pine for your projects may seem simple, but watch out. Ordinary lumberyard pine can warp, twist, or split if crafted into tightly joined indoor furniture projects.

Moisture is the villain. The pine in most home centers and lumberyards contains up to 15 percent moisture. In winter in a heated home, the moisture content drops as low as 6 to 8 percent, and the wood shrinks. Anything joined with dovetails, mortises, dowels, or biscuits may go to pieces. Here's our advice on how to avoid this problem, and how to get the most for your money with this versatile and popular wood.

For indoor furniture projects, buy pine with a moisture content of 6 to 8 percent—the standard for furniture-grade hardwoods. You can usually buy this low-moisture pine at lumber stores that handle furniture-grade woods such as oak and maple.

If you buy a lot of stock, invest in a moisture meter. For $100 to $150 these devices tell you exactly how much moisture your wood contains.

For construction or outdoor projects, lumberyard pine works fine. Just avoid glued-up panels and snug-fitting joinery.

Plan projects around the knots to save money. The knots in common-grade pine are spaced 12" to 15" apart. You can cut out the clear sections between the knots and pay for the more expensive clear grades only when you need a longer span.

To duplicate the mellow patina of antique pine furniture, use Eastern white pine—the wood our colonial forebears preferred—and give it a light amber stain. Eastern white pine offers a fine grain with a low contrast between early and late wood, and it finishes well. Idaho white pine makes a good second choice.

For any project, allow lumberyard pine to season. Store the lumber in your shop or house for at least two weeks. A month to six weeks is preferable, especially during humid weather. Use stickers, or stack the wood on edge so that air circulates freely around it.

Don't get hung up on the complicated grade classifications and terminology of pine. Pick your boards by hand and let your eyes be the judge.

Seal pine, especially the end grain, before you finish it to prevent uneven absorption of stain or finish. Use a wash coat of shellac or a sanding sealer. Make sure any sealer you use is compatible with your final top coat.

Illustration: Jim Stevenson

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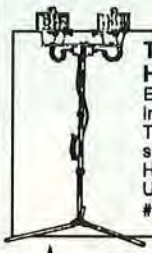

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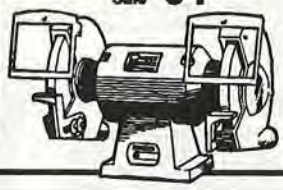

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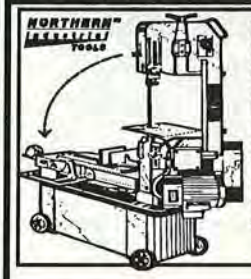

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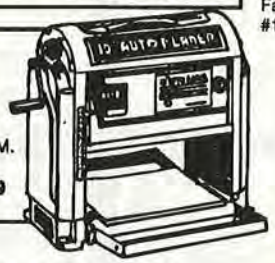

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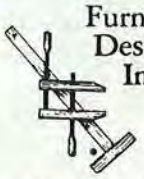

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ASK WOOD

Print this article

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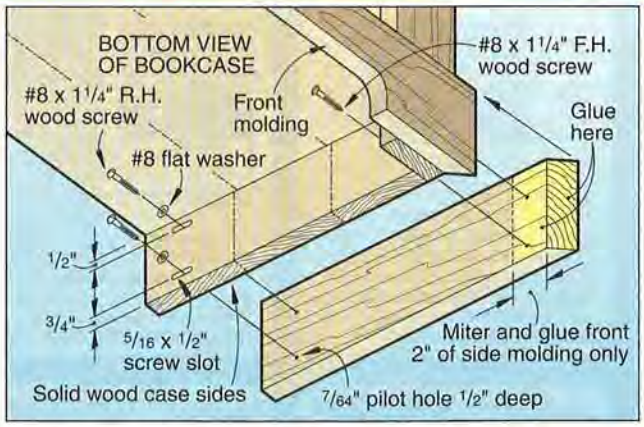
The joint is open

I made two bookcases from the February 1992 issue, using solid oak. The trim at the bottom was glued and screwed to the sides. In spite of this, the miter joints at the corners opened up. Could this be prevented by using biscuits in the miters?

—L. Sweeney, Kingston, Ont.

Due to high humidity, the solid-oak sides on your cabinet expanded, causing your miters to open up. (We built our bookcase using plywood sides to avoid this problem.) Would biscuit joints be the solution? Probably not.

Now, since your joints have opened up, here's how to correct the problem. Remove the screws


BOTTOM VIEW OF BOOKCASE
#8 x 1¼" R.H. wood screw
Front molding
#8 x 1¼" F.H. wood screw
Glue here
#8 flat washer
½"
¾"
5/16 x ½" screw slot
Solid wood case sides
7/64" pilot hole ½" deep
Miter and glue front 2" of side molding only

and pry off the side moldings, cleaning the mating areas for re-attachment. Drill small slots through the bottom ends of the solid-wood sides where shown in the drawing. Next, apply glue to the inside 2" of the mitered end of one of the side moldings. Clamp the molding in position on the bookcase side, making sure the miter joint is tight, and fasten the mitered end with a flat head screw. Secure the rear of the molding to the case side using round head screws driven through the slots and into the molding. To compensate for expansion, the slots should allow ⅛" of movement for each foot of width of the side, and be slightly wider than the shank of the screw used to fasten the molding.

Continued on page 90

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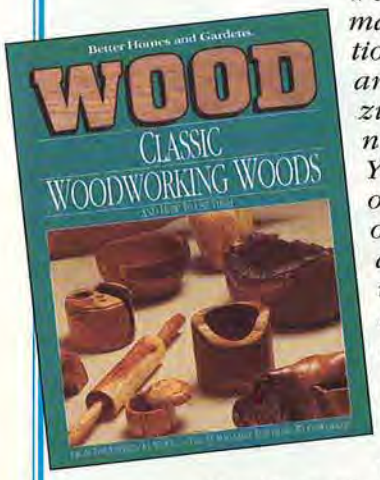
ASK WOOD

Continued from page 88

A gathering of trees

Is it possible to obtain a compilation of all the articles you published on trees? I'm sure many have asked this question before.

—George E. Carter, Toronto



We have indeed received many requests for a collection of the "Wood Profile" articles from our magazine, and we have good news for you, George. You'll find a collection of over 40 of these articles on wood species, as well as other information of value to the woodworker, in the Better Homes and Gardens® WOOD® book **Classic Woodworking Woods and How to Use Them.** *This book should be locally available in Waldenbooks and B. Dalton bookstores.*

Return of the glue spot!

When I glue up boards, I use yellow glue. I am very careful with the glue and wipe all excess off with a damp sponge or cloth. I sand the wood before staining, but for whatever reason, areas that have been exposed to glue stain differently. What am I doing wrong? Please help!

—George M. Clark, Starkville, Miss.

To prevent this from happening, allow the glue to dry, then use a paint scraper to remove the residue. This removes the glue, and also removes a very thin layer of the wood, leaving a fresh area of wood for the stain to penetrate.

Remember that the best technique for dealing with excess glue is to not use too much in the first place. The strength of the joint depends more on how tight it fits together than on the amount of glue used. In fact, excess glue can result in a weaker joint and make the glue-up process messier and more difficult.

So what's the right amount of glue? As a guideline, apply a thin, even layer of glue to each joint face. Clamping should produce small (1/16" or smaller) beads of glue at the joint line.

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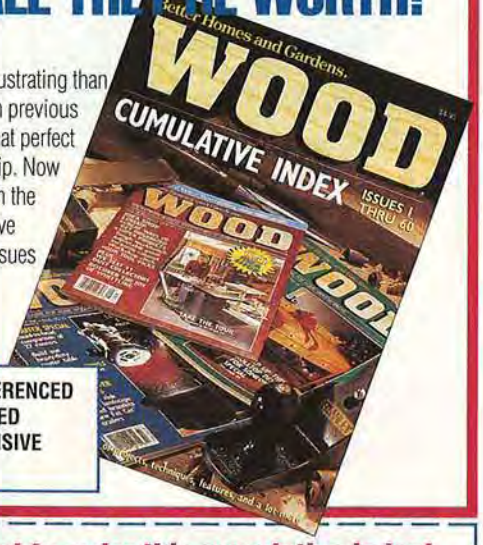

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Plane cleaning

I have just acquired a very old Stanley jack plane, that has a thin coat of rust over most of it. What is the best way to clean this plane?

— Allan L. Harper, Westfield, N.Y.

We found a recommendation in The Antique Tool Collectors' Guide to Value, *by Ronald S. Barlow (Windmill Publishing, 1985). The author recommends that you disassemble the tool prior to cleaning, and soak the parts in kerosene overnight. Use steel wool to remove the loosened surface rust. Do not use sandpaper or a coarse wire brush, as these will destroy the patina on the tool.*

We suggest you also look at the article we published on rust removal by electrolysis in our September 1993 issue. This procedure involves a simple, homemade apparatus to remove rust from old tools. Jim Price, our source for this technique, recommends rinsing the tool with water, and then buffing with jeweler's rouge to remove rust stains. Rub on a coat of light machine oil to finish and protect the patina.

For a fresher finish ...

I use polyurethane finish on many projects, and no matter what small container I put it in after using, it thickens up so I can't spread it. The finish left in the gallon can forms a skin on top. What can I do to keep this finish usable?

— H.M. Hoff, McPherson, Kan.

For an answer we contacted Jonathan Kemp of H. Behlen & Bro., a manufacturer of finishing products. He said the unused polyurethane finish reacts with oxygen in the can, and the thickening and skin forming are a part of the drying process.

To remedy this situation, Jonathan recommends purchasing your polyurethane finish in containers just large enough to do the job at hand. He also said that you should not move any finish from its original container, unless you transfer the original label with instructions and safety information to the new container.

Purchasing polyurethane finishes in smaller containers may seem more expensive than buying it in a gallon can, until you consider the amount lost due to oxidation while being stored. If you use a lot of finish, contact your local supplier about a volume discount on buying a case of smaller containers. Purchasing polyurethane in smaller cans allows you to use fresh finish on every project.

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Model	Description	List	Sale
23-700	Wet/Dry Grinder	234	168
23-680	6" Bench Grinder 1/4 HP	86	75
23-880	8" Bench Grinder 1/2 HP	151	115
11-950	8" Drill Press	199	144
31-050	1" Belt sander 2.0 amp	104	78
31-460	4" Belt/Disc Sander	198	135
31-340	1" Belt/8" Disc Sander	288	204
31-080	1" Belt/5" Disc Sander	134	94
40-560	16" 2 speed Scroll Saw	266	178
11-990	12" Bench Drill Press	276	205
11-090	32" Radial Bench Drill Press	399	278
43-355	3/4" Shaper 1-1/2 HP	964	709
43-505	1/2" Bench Router/Shaper	399	275
22-540	12" Bench Top Planer		398
36-220	10" Compound Mitre Saw	350	235
28-180	Bench Band Saw	232	145
28-190	NEW 12" Band Saw	465	375
40-640	20" Bench Scroll Saw	466	305
37-070	NEW 6" v/spd Bench Jointer	330	248
14-650	Hollow Chisel Mortiser	361	289
46-700	12" Wood Lathe	548	439
33-990	10" Radial Arm Saw	818	615
37-280	6" Motorized Jointer	488	395
37-154	DJ15 6" Jointer w/3/4HP motor	1420	1089
50-179	3-4 HP 2 stage Dust Collector	483	335
70-200	20" Floor Drill Press	1049	815
33-055	8-1/4" Sawbuck comp w/legs	865	595
34-330	8-1/4" Table Saw 13A	343	234
32-100	Stationary Plate Jointer	645	249
36-040	8-1/4" Compound Mitre Saw	224	155
34-915	30" Unifence	385	239
34-897	50" Delta Unifence	525	285
36-755	10" Tilt Arbor Saw	1264	939
34-444	Contractors Table Saw	812	615
17-900	16-1/2" Floor Drill Press	441	389
40-601	18" Scroll Saw with stand	942	745
22-661	13" Planer with 2HP motor	1436	1168

Planer has $75.00 rebate - price is before rebate

33-060	NEW "Sidekick" Miter Saw	499	365
14-070	NEW 14" Floor Drill Press	450	345
50-075	Dust Collector/Sweeper 3/4 HP	360	245

The following Delta tools have a $50.00 rebate! Price shown is before rebate.

28-283	14" Band Saw w/enc. stand	910	735
34-445	34-444 Saw w/30" Unifence	1200	775
34-445B	34-444 w/Bies, 50" saw fence	1300	889

MILWAUKEE TOOLS

6527	NEW Sawzall with case	309	164
6528	above Sawzall w/wired cord	305	164
6125	NEW 5" Random Orbit Sander	200	112
6126	NEW 6" Random Orbit Sander	205	115
0399-1	12V cordless Drill Kit comp	309	168
0402-1	above Drill w/kyls chuck & 2 batt		168
0395-1	9 6V cordless Drill with case	284	158
0224-1	3/8" Drill 4.5 amp magnum	215	114
0234-1	1/2" Drill 4.5A mag 0-850 rpm	229	119
0244-1	1/2" Drill 4.5A mag 0-600 rpm	229	123
0222-1	3/8" Drill 3.5 amp 0-1000 rpm	189	107
0228-1	3/8" Drill 3.5 amp 0-1000 rpm	186	104
0375-1	3/8" close quarter Drill	229	127
0379-1	1/2" close quarter Drill	260	145
6546-1	cdls Screwdvr 200 & 400 rpm	138	82
5399	1/2" D-hdle Hammer Drill Kit	325	188
6750-1	Drywall Gun 0-4000 5 amp	168	94
6507	Original SawZall with case	259	138
6010	Orbital Sander 1/2 sheet	214	118
8977	variable temp. Heat Gun	128	77
5397-1	3/8" var. spd Hammer Drill Kit	250	138
5371-1	1/2" var. spd Hammer Drill Kit	375	184
3107-1	1/2" v/spd right angle Drill Kit	385	204
6754-1	Drywall Gun 0-4000 5.4 amp	192	110
3300-1	1/2" var. spd right angle Drill	339	182
5680	Router 2 HP - 12 amp	355	198
0235-1	1/2" Drill w/keyless chuck	229	128
6145	4-1/2" Grinder 10,000 rpm	165	99
6142	6145 with case & accessories	204	124
6749-1	Drywall Gun 0-2500 5.4 amp	214	124
6365	7-1/4" Circular Saw 13 amp	214	122
6366	6365 w/fence & carbide blade	224	127
6368	6365 w/fnce,carb. blde,& case	244	139
6377	7-1/4" Worm Drive Saw	324	184
6256	Top Handle Jig Saw	259	144
6490	10" Mitre Saw	444	248

FREUD CARBIDE TIPPED SAW BLADES
5/8" Bore - Industrial Grade

Item	Description	Teeth	List	Sale
LU72M010	Gen Pur. A.T.B. 10"	40	69	39
LU82M010	Cut-off 10"	60	93	49
LU84M011	Comb 10"	50	78	42
LU85M010	Super Cut-off 10"	80	115	59
LM72M010	Ripping 10"	24	69	38
LU73M010	Cut off 10"	60	84	45
LU87M010	Thin Kerf 10"	24	72	39
LU88M010	Thin Kerf 10"	60	88	45
LU98M010	Ultimate 10"	80	128	68
LU91M010	Compnd Mitre 10"	60	88	54
TK303	7-1/4" Finishing	40	38	22
TK306	10" Finishing	40	47	25
TK906	10" Combo	50	53	29
SD306	6" Dado - Carbide		215	112
SD308	8" Dado - Carbide		230	119
F0	1-3/4" x 5/8" Biscuit 1000 Qty		43	29
F10	2-1/8" x 3/4" Biscuit 1000 Qty		43	29
F20	2-3/4" x 1" Biscuit 1000 Qty		45	29
FA	Assorted Biscuits 1000 Qty		45	29
FB100	16 piece Forstner Bit Set		338	184
94-100	5 pc. Router Bit Door System		320	159
TR215	NEW 10" Slide Cmpd Mitre Saw		688	359

The following FREUD Tools have a $30.00 rebate!
Price shown is before rebate - Expires 1/15/94

FT2000E	3-1/4 HP v/sp Plunge Router	410	205
JS100	Biscuit Jointer with case	334	162

MAKITA TOOLS

Model	Description	List	Sale
6070DW	3/8" v/spd Reverse Drill 7.2V	128	74
6071DWK	above Drill w/removable batt.	216	115
5090DW	3-3/8" Saw Kit 9.6 volt	270	145
6010SDW	3/8" cordless Drill Kit 7.2V	99	59
ML900	Incandescent Flashlight 9.6V	Sale	37
6012HDWE	2 speed Drill Kit w/2 batt.	255	129
6093DWE	6093DW Drill Kit w/2 batteries	296	145
6095DWE	6095DW Drill Kit w/2 batteries		139
6201DWE	NEW 9.6V Drill Kit w/2 batt.	310	155
6211DWE	12V Drill Kit with 2 batteries	342	168
632007-4	9.6 volt Battery	48	30
632002-4	7.2 volt Battery	40	28
5007NBA	7-1/4" Saw w/electric brake	263	124
5008NBA	8-1/4" Saw w/electric brake	316	188
B04510	1/4 sheet Pad Sander	106	59
9900B	3" x 21" Belt Sander w/bag	297	165
9924DB	3" x 24" Belt Sander w/bag	329	185
4301BV	Orb. var. spd Jig Saw 3.5A	292	165
JR3000V	var. speed Recip Saw w/case	252	135
LS1020	10" Mitre Saw 3.5 amp	630	339
9820-2	Blade Sharpener	394	189
N1900B	3-3/4" Planer with case	232	129
1911B	4-3/8" Planer 7.5 amp	309	175
9514B	4" Disc Grinder 4.6 amp	111	65
3601B	1-3/8 HP Router	288	158
B04550	1/4 sheet Pad Sander w/bag	98	49
DA3000R	3/8" Angle Drill	314	148
2708W	8-1/4" Table Saw	585	279
2711	10" Table Saw with brake	1067	525
6404	3/8" Drill Rev. 0-2100 rpm	112	58
6510LVR	3/8" Drill Rev. 0-1050 rpm	168	89
6820V	0-4000 rpm Drywall Gun	171	92
6013BR	1/2" Drill Rev. 6 amp	280	145
5402A	16" Circular Saw 12 amp	743	410
9401	4" x 24" Belt Sander w/bag	378	205
4302C	var. speed Orbital Jig Saw	351	194
5077B	7-1/4" Hypoid Saw	281	159
LS1030	NEW 10" Mitre Saw	428	199
5007NB	7-1/4" Circular Saw 13 amp	232	119
2012	12" Portable Planer	959	495
LS1011	10" Slide Compound Saw	946	498

SIOUX TOOLS

8030	New 3/8" var/spd Drill	238	139
8000	3/8" var/spd close qtr Drill	201	123
690	5" Air Random Orbit Sander	139	132
690VV	690 w/venturi dust collection	281	175

SENCO AIR NAILERS

SFN1	Finishing Nailer 1" - 2"	377	269
SFN2	Finish. Nailer 1-1/2" - 2-1/2"	571	375
SN325	Nailer 1-7/8" - 3-1/4"	665	425
SLP20	New Pinner w/case 5/8" - 1-5/8"	399	269
SKS	Stapler 5/8" - 1-1/2"	351	245
SN70	NEW HD Framer 2" - 3-1/2"	625	475

BOSTITCH AIR NAILERS

N80S-1	Stick Nailer	Super Sale	348
N12B-1	Coil Roofing Nailer	845	395
N60FN-2	Finishing Nailer	625	335
T31	Brad Nailer	270	145
CWC100	1 HP Pancake Compressor	445	289

EXCALIBUR Fences & Tables

TT45R24L9	24" Fence	369	299
TT45R50L12	50" Fence	399	318
EXSLT30	Sliding Table	599	475
EXSLT60	Sliding Table	745	585

SKIL SIZZLERS

77	7-1/4" Worm Drive Saw	257	144
2735-04	12 volt cordless Drill Kit	249	132
2736-04	2735-04 with keyless chuck	269	135
1605-02	Biscuit Jointer w/case	221	129
3400	10" Table Saw - Bench Top	270	179

PANASONIC CORDLESS

EY6205BC	Variable speed 12 volt Drill with 15 minute charger & case	353	179
EY6205EQK	Same as EY6205BC but comes with Ironman battery	368	189
EY6207BC	NEW 12 volt 1/2" Drill w/keyless chuck var. speed w/15 min. charger & case	420	222
EY6282EQK	Var. spd 9.6 volt Drill with 15 min. charger, case & NEW Ironman battery	315	168
EY6282IDKW	9.6 volt Drill Kit w/2 batt.	275	158

NEW PREDATOR DRILLS

EY6181CRKW	NEW 9.6V Compact Drill Kit w/2 batt - 10% more pwr than EY6282IDKW	305	164
EY6100CRKW	NEW 12 volt Drill Kit with 2 batteries, 1 hour charger, & case	358	189
EY6100EQK	NEW 12 volt Drill kit with NEW Ironman battery, 15 min. charger, & case	358	199

PASLODE IMPULSE GUNS

IM250	Trimpulse Finish Nailer Kit	849	595
IM325	Impulse Framing Nailer Kit	849	595

WAGNER PRODUCTS

120	Power Sprayer	70	57
230HD	Power Painter/Sprayer	100	84
255	Airless Kit	180	130
375E	Airless System	195	155
404	Airless Painter & Roller	320	249
505	High performance Airless Painter	440	369
550	Pro Airless Painting System	769	685
HVLP	Fine coat finishing HVLP System	195	155
CS2000P	Pro fine finish HVLP System	339	269

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List 292 Sale 148

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DEWALT TOOLS

DW364	7-1/4" Circ. Saw w/brake	13 A	275	148
DW945K-2	3/8" 12V cdls Drill Kit w/2 batt		298	169
DW944K-2	3/8" 9 6V cdls Drill Kit w/2 batt		277	149
DW6101	1-1/2 HP 2 handle Router		270	148
DW411	1/4 sheet Palm Sander, 1.7 amp		97	58
DW1003	3/8" Drill, 4 amp 0-2500 rpm rev.		116	68
DW510K	1/2" v/spd Hammer Drill w/case		298	165
DW682K	NEW Biscuit Joiner with case		428	225
DW705	12" Compound Mitre Saw		658	358
DW615	NEW 1-1/4 HP Elect. Plge Router		290	158
DW625	NEW 3 HP var. spd Plunge Router		399	269
DW675K	NEW 3-1/8" Planer with case		280	159
DW431	NEW 3 x 21 v/spd Belt Sander		320	182

PORTA NAILER

401	Porta Nailer complete	265	198
501	Face Nailer complete	265	195

WERNER LADDERS

6204	4' Fiberglass	179	65
6205	5' Fiberglass	199	75
6206	6' Fiberglass	225	82

WINTER KIT SPECIALS

9852K	Porter Cable 9852 Drill Kit w/extra batt	185	
9853K	Porter Cable 9853 Drill Kit w/extra batt	185	
7335K	Porter Cable 5" var. spd Random Orbit Sndr w/case & 1 roll 100X & 150X discs	273	169
7336K	Porter Cable 6" var. spd Random Orbit Sndr w/case & 1 roll 100X & 150X discs	278	175
555K	Porter Cable Plate Biscuit Jointer with case & 1000 assorted biscuits	339	195
JS100K	Freud Jointer w/cs & 1000 bisc	351	188
1581VSK	Bosch Top Handle Jig Saw with case & 30 Bosch blades	305	175
1582VSK	Bosch CLIC Barrell Grip Jig Saw with case & 30 Bosch blades	305	175
JM100KK	Ryobi Joiner w/1000 biscuits	475	242

BIESEMEYER FENCES

B-50	50" Commer. Saw Fence	345	298
T-SQUARE 52	52" Homeshop Fence	279	238
T-SQUARE 40	40" Homeshop Fence	259	208
T-SQUARE 2828	28" Homeshop Fence	249	198

WEDGE SMART LEVEL

SM-PR2	2 FT Level with sensor	120	88
SM-PR4	4 FT Level with sensor	150	105
SM-PR6	78" Level with sensor	180	139
SL224	NEW 2FT Level with sensor	79	55

Msx636 FEIN	Triangle Sander Kit	Sale	195
LPN672 PONY	Air Palm Nailer w/glove	Sale	94.99

JORGENSEN ADJUSTABLE HANDSCREWS

Item#	Jaw Length	Open Cap	List	Sale	Box of 6
#0	8"	4-1/2"	19.00	11.75	58.00
#1	10"	6"	21.76	12.50	68.00
#2	12"	8-1/2"	24.95	14.50	78.00
#3	14"	10"	31.61	18.00	98.00
#4	16"	12"	42.30	23.95	139.00

JORGENSEN STYLE 37 2-1/2" Throat 1/4"x3/4"

Item#	Jaw Length	List	Sale	Box of 6
3706	6"	9.86	6.05	32.50
3712	12"	10.92	6.50	35.10
3718	18"	12.05	6.99	37.75
3724	24"	13.16	7.99	42.50
3730	30"	14.70	8.85	47.75
3736	36"	16.05	9.99	53.95

PONY CLAMP FIXTURES

Model		List	Sale	Lots of 12
50	3/4" Black Pipe Clamps	13.61	7.75	83.99
52	1/2" Black Pipe Clamps	11.37	6.40	68.50

BOSCH

1581VS	Top Handle Jig Saw	275	145
1582VSC	NEW CLIC Barrell Jig Saw	275	145
	Bosch Metal Case for above Jig Saws	34	32
	Bosch 30 blade assortment for Jig Saws		27.99
1942	Heat Gun 600° - 900°	115	78
1272D	3" x 24" Belt Sander with bag	340	185
1273D	4" x 24" Belt Sander with bag	359	195
11-212VSR	Bulldog 3/4" SDS Rtry Drill	370	198
1347AK	4-1/2" Grinder w/case & access.	175	104
1348AE	5" Grinder 8.5 amp	209	118
1194VSR	1/2" var. speed Hammer Drill	259	145
1194VSRK	above Hammer Drill w/case	287	169
1608	5.6 amp Laminate Trimmer	154	88
1609K	Lam Installers Kit with 1609	315	175
1609KX	Deluxe Installers kit	369	198
1604A	1-3/4 HP 2 Handle Router	249	134
1604AK	same as above w/case & acc.	299	169
1606A	1-3/4 HP D-handle Router	273	168
3258	3-1/4" Planer w/blade guard	247	138
3258K	3258 Planer with steel case	273	154
3270D	3" x 21" Belt Sander with bag	270	148
1273DVS	var. spd 4" x 24" Belt Sander	380	204
1614	NEW 1HP Plunge Router	225	128
1614EVS	NEW 1 1/4HP v/spd Plge Rtr.	260	149
1613	NEW 1-3/4 HP Plunge Router	290	164
1613EVS	NEW 2HP v/sp Plunge Router		183
1615	NEW 3 HP Plunge Router	395	228
1615EVS	NEW 3 HP v/spd Plge Router	460	244
1632VSR	K Recip Saw 8.4A orb-v/spd	225	148
3050VSRK	9 6V cdls v/sp Drill Kit comp	256	138
3051VSRK	3050VSRK w/keyless chuck	266	145
1370DEVS	6" Random Orbit Sander	391	219
3283DVS	5" Random Orbit Sander	169	98
3283DVSK	3283DVS Kit complete	199	118

ELU BY BLACK & DECKER

Model	Description	List	Sale
3338	2-1/4 HP v/spd Plunge Router	448	249
3375	3-1/8" Univ. planer 7.2 amp	329	155
3380	Biscuit jointer with case	569	248
3339	NEW 3 HP v/sp Plunge Router	500	265

BLACK & DECKER

1166	3/8" Drill 0-2500 rpm 4 amp	105	65
1703-1	10" Mitre Saw w 73-770 blde.	329	185
79-034	Workmate 400	177	109
2694	7-1/4" Super Saw cat w/case	275	152
2695	8-1/4" Super Saw cat w/case	308	162

DAVID WHITE

LP6-20	Sight Level package - 20x	310	198
LP6-20XL	LP6-20 w/9056 tripod & 7620 rod		249
L6-20	Meridian Level - 20x	290	185
LT8-300	Level Transit - 26x	650	445
LT8-300P	above Level w/optical plum	769	518
LT6-900	Level Transit - 20x	389	249
ALT6-900	Automatic Level - Transit - 18x	549	385
ALTP6-900	above Level w/tripod & rod	600	459
ALP6-18HD	above Level w/tripod & rod	550	369

RYOBI SPECIALS

JP-155	6-1/8" Jointer/Planer	648	305
TS-254	10" Mitre Saw	420	198
RE600	3 HP Plunge Router	465	215
BE321	3" x 21" var. spd Belt Sander	290	135
TFD222VRK	12V cordless Drill Kit	325	172
JM100K	Biscuit Jointer w/case	453	209
BT3000	10" Table Saw with stand	1204	529
TSS220	8-1/2" Slide Comp. Saw	966	435
DS1000	NEW Detail Sander	90	44
AP12	NEW 12" Bench Planer	884	399
RA202	NEW 8-1/4" Bench Radial Saw	695	389
BS900	NEW 9" Bench Band Saw	298	174
IDV26	NEW 28 Gal. Industrial Dry Vac	198	119
OSS450	NEW Oscillating Spindle Sander	298	174

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QUAL-CRAFT PRODUCTS

2200	Pump Jack	79	58
2201	Pump Jack Brace	30	20
2203	Pump Jack guard rail holder	30	21
2204	Workbench & rail holder combo	53	39
	Buy any 6 (can be assort.) deduct 10%		
2601	Wall Jack	167	108
	Lots of 4 deduct additional 10%		

PORTER CABLE

690	1-1/2 HP Router 8 amp	255	138
9690	690 Router with steel case	305	145
691	1-1/2 HP Router D-handle	280	149
695	1-1/2 HP Router/Shaper	390	218
696	HD Shaper Table	225	129
351	3" x 21" Belt Sander w/o bag	270	148
352	3" x 21" Belt Sander with bag	280	154
360	3" x 24" Belt Sander with bag	350	194
361	3" x 24" Belt Sander w/o bag	330	184
362	4" x 24" Belt Sander with bag	365	198
363	4" x 24" Belt Sander w/o bag	345	195
315-1	7-1/4" Top Hdle Circular Saw	220	118
9315-1	315-1 comp. w/cs & carb bld.	250	139
617	7-1/4" Pushhandle Saw	220	124
9617	617 comp. w/case & carb blde.	250	142
97751	1/2" v/spd Hammer Drill w/case	265	155
9118	Porta Plane Kit 7 amp	380	209
505	1/2 sheet Pad Sander	225	118
6611	3/8" var. speed Drill 5.2 amp	210	118
6614	1/2" var. speed Drill 0-750 rpm	220	124
6615	7514 with keyless chuck	220	124
7549	Top handle Jig Saw 4.8 amp	260	145
330	Speed Block Sander 1/4 sheet	105	60
555	Plate Biscuit Jointer with case.	320	168
556	555 w/5556 tilt fnce & 100 biscuits		175
345	6" Saw Boss 9 amp	190	104
9345	345 comp. w/case & carb blde.	220	124
9647	TIGER CUB Recip. Saw	205	117
9637	Full var/spd Recip Saw 8 amp	265	148
7519	3-1/4 HP Router 2 Handle	430	234
7518	3-1/4 HP 5 speed Router	495	268
7538	3-1/4 HP Plunge Router	430	234
7399	5.6 amp Drywall Cutout Unit	140	84
7310	5.6 amp Laminate Trimmer	160	92
97310	Laminate Trimmer Kit comp	355	195
7334	5" Random Orbit Sander	221	122
7335	5" var. spd Rndm Orbit Sndr	241	129
7336	6" var. spd Rndm Orbit Sndr	246	137
73333	Dust Collection system	31	24.50
693	1-1/2 HP Plunge Router Base	315	172
6931	Plunge Router Base	125	77
7539	3-1/4HP v/spd Plunge Router	495	264
9852	12V 3/8" Drill w/case 0-1000rpm	280	149
9853	9852 with keyless chuck	280	154
9855	12V 1/2" 2 spd. v/spd Drill w/cs	335	184
8500	12V battery for above drills	Sale	45
	New Tools by Porter Cable		
9841	9.6V Drill Kit-15 min. charger	309	169
9840	9.6V Drill Kit with 2 batteries	289	164
332	Palm Grip Rndm Orbit Sander	116	64
333	above Sander with dust bag	131	68
334	333 Sander with PSA pad	131	74
352VS	3x21 Belt Sander w.bag v/spd	295	165
7116	24" Omni Jig	530	294
550	Pocket cutter with case	330	185
310	Production Laminate Trimmer	250	145
7700	10" "Lazerloc" Mitre Saw	634	339
347	7-1/4" "Framers" Circ Saw	225	129
447	347 Saw with brake	245	139

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Print this article

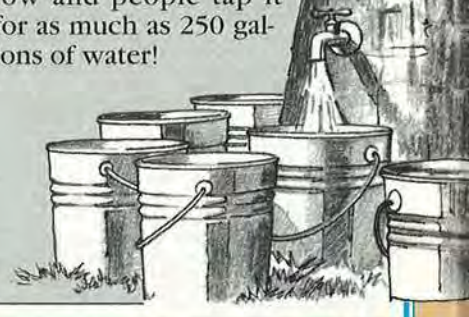
Getting the bugs out of Siberian wood

USDA Forest Service scientists say that raw larch logs, should they be imported from Siberia or elsewhere in the former USSR, present a great threat to North American forests. Writing in the *Western Journal of Applied Foresty,* Donald Goheen and Borys Tkacz describe six insects and diseases (out of 179) that they found on larch trees during an assessment trip to that region.

Citing the U. S. experience with the gypsy moth, Dutch elm disease, and chestnut blight (all originating in Europe) as examples of potential ecological impact, the authors insist that imported larch logs from that area of the world must be rigorously treated to kill pests. Although no larch logs are now entering the U.S., notes Coheen, there has been high interest among importers, sparked by increasing consumer demand for softwoods.

Tap the tanker tree, then stand back!

One of the longest-lived trees in the world, the baobab of East Africa, has a trunk that frequently attains a circumference of 100'. Often, the trunk becomes hollow and people tap it for as much as 250 gallons of water!



BUILD-A-TOY™ COUNTDOWN

You still have about 30 days to enter a toy in *WOOD*® magazine's annual Build-A-Toy contest that benefits needy kids through Toys for Tots. Entry deadline is February 1. See details in the October 1993 issue.

FRONT & CENTER
WOODWORKERS WHO MAKE A DIFFERENCE

Name: St. Joseph's Guild
Age: 70-plus years
Home: Wheaton, Ill.
Occupation: Electronic engineer, insurance executive, printer, publishing executive, and an architect, all retired.

St. Joseph's Guild members, *from left*, Robert Taylor, Paul Gilroth, Ted Kehoe, Dwight Early, and John Legg meet at their Wheaton, Illinois, church every Wednesday evening to ply their woodworking skills to benefit the congregation.

It's no secret that most churches continually face repairs that never seem to be adequately funded in their budgets. Trinity Episcopal Church, in Wheaton, Illinois, isn't an exception. But the work gets done, thanks to the woodworking skills of St. Joseph's Guild.

According to Robert Taylor, who wrote to *WOOD* magazine about the volunteer group, it all started four years ago when two recently retired men stepped forward to help out with home repairs and construction projects to benefit the congregation's elderly. "One such project was a home ramp for a wheelchair-bound member. The project caught the attention of three other retirees with woodworking talent. Thus was born the group who decided to call themselves St. Joseph's Guild," explained Robert.

Since then, every Wednesday evening finds the guild members at the church, tool boxes in hand, working on a varied list of repairs and projects. The jobs that can't be done with tools and equipment available at the church end up as projects in one or more of their home shops.

To date, St. Joseph's Guild (see photo *above*) has expertly completed jobs such as repairing furniture, rehanging doors, constructing teaching aids, and building the rector's cherry desk and credenza. Their greatest accomplishments so far, though, were recreating period doors for the church's 110-year-old chapel, and the reglazing and setting of 23 leaded-glass church windows. That project alone saved the congregation $8,000. St. Joseph's Guild, take a well-deserved bow!

Illustration: Jim Stevenson

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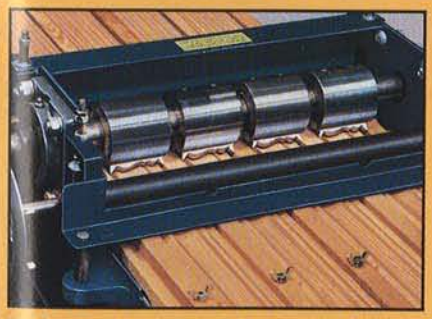

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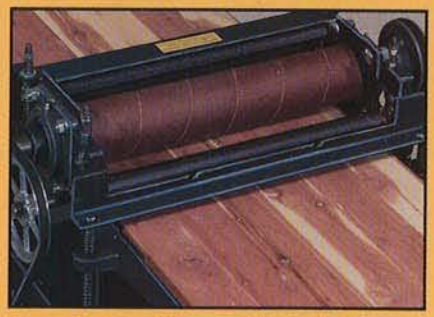

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Editor, Workbench Magazine

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ALL OUR NEW MACHINERY FROM THIS AD IS DIRECTLY FROM THE MANUFACTURER EXCLUSIVELY FOR ENLON.
IMMEDIATE DELIVERY IS AVAILABLE FOR ALL NEW MACHINERY.
ENJOY THESE SPECIAL PRICES WHILE THEY LAST.

Thank you for your support.

6" JOINTER

- 1 H.P.,110/220V
- 3-KNIFE CUTTERHEAD
- 47" BED LENGTH

*EN3101
REG.:$395.00
SPECIAL:
$350.00

8" HEAVY DUTY JOINTER

- 1 1/2 H.P.,220V
- 3-KNIFE CUTTERHEAD
- 65" BED LENGTH

*EN3102
REG.:$700.00
SPECIAL:
$645.00

2 H.P. DUST COLLECTOR

- 220V,15 AMPS
- 1,059 C.F.M.
- 2 INTAKES @ 4"

*EN-DC20
REG.:$305.00
SPECIAL:
$270.00

FREE 4" x 10' P.V.C. HOSE with purchase of any Dust Collector.

20" INDUSTRIAL BAND SAW

- 3 H.P., 220V, 15 AMPS
- BLADE SPEEED: 3,700 F.P.M.
- 12" MAX. CUTTING HEIGHT

*EN3506
REG.:$1,490.00
SPECIAL:
$1,230.00

22" SCROLL SAW

- 1/8 H.P.,110V
- 1,725 S.P.M.
- DUST BLOWER

EN-SC22
REG.:$160.00
SPECIAL:
$139.00

10" TILTING ARBOR TABLE SAW

- 3 H.P., 220V, 15 AMPS
- PRECISION GROUND CAST IRON TABLE
- PRECISION LEVER LOCK FENCE SYSTEM
- STEEL BASE CABINET

*EN3202
REG.:$970.00
SPECIAL:
$850.00

1/2" WOOD SHAPER

- 1 H.P.,110V, 16 AMPS
- 1/2" SPINDLE
- REVERSIBLE MOTOR
- CAST IRON TABLE

*EN-WS05
REG.:$280.00
SPECIAL:
$265.00

1 1/2 H.P. WOOD SHAPER

- 110/220V, 7,000/10,000 R.P.M.
- 1/2" & 3/4" SPINDLES
- CAST IRON TABLE

*EN3302
REG.:$560.00
SPECIAL:
$490.00

3 H.P. HEAVY DUTY WOOD SHAPER

- 220V,7,000/10,000 R.P.M.
- 1/2", 3/4" & 1" SPINDLES
- CAST IRON TABLE

*EN3303
REG.:$865.00
SPECIAL:
$790.00

3 H.P. SLIDING TABLE WOOD SHAPER

- 220V, 7,000/10,000 R.P.M.
- 24" X 9" SLIDING TABLE
- 1/2", 3/4" & 1" SPINDLES

*EN3304
REG.:$980.00
SPECIAL:
$890.00

6" X 48" BELT/9" DISC SANDER

- 3/4 H.P., 110/220V
- MITER GAUGE
- ADJUSTABLE TABLE 0-45°

*EN-SN69
REG.:$216.00
SPECIAL:
$185.00

6" X 30" EDGE SANDER

- 1 1/2 H.P., 110/220V
- 6" X 80" BELT
- QUICK RELEASE LEVER
- CAST IRON TABLE

*EN3405
REG.:$450.00
SPECIAL:
$405.00

12" PLANER

- 2 H.P.,110V, 14 AMPS
- 16,000 C.P.M.
- 2-KNIFE CUTTERHEAD

EN-PN12
REG.:$390.00
SPECIAL:
$355.00

15" PLANER

- 3 H.P., 110/220V, 30/15 AMPS
- 2 SPEEDS: 16 & 20 F.P.M.
- 3-KNIFE CUTTERHEAD

*EN-PN15
REG.:$900.00
SPECIAL:
$815.00

20" PLANER

- 3 H.P.,220V, 15AMPS
- 2 SPEED: 16 & 20 F.P.M.
- 4-KNIFE CUTTERHEAD

*EN-PN20
REG.:$1,330.00
SPECIAL:
$1,190.00

Call for FREE Catalog or Router Bits and Shaper Cutters Catalog.
FREE Enlon Baseball Cap with any purchase over $50

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GIFT CERTIFICATES AVAILABLE

SHOWROOM/MAIN OFFICE: 19400 E. SAN JOSE AVE., CITY OF INDUSTRY, CA 91748
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SHOWROOM/SHIPPING WAREHOUSE: 12 ARMORY ROAD, CLARKSBURG, WV 26301 HOURS: MON-FRI 8:00AM -5:00PM E.S.T.